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# SAMENA TRENDS

EXCLUSIVELY FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

**BUILDING DIGITAL ECONOMIES**

A SAMENA Telecommunications Council Newsletter



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## 77. SAMENA ACTIVITY

SAMENA Council chaired ITU's 5th Private Sector Chief Regulatory Officers (CRO) meeting

SAMENA Council chaired panel session in ITU Telecom World

# Growing demand for broadband infrastructure investment and operators' readiness. What is the way forward?



During the ITU Telecom World 2015, we had a wonderful set of discussions among the three core stakeholders: policy-makers, regulatory authorities, and various members of the private sector. Even more wonderful was the in-principle agreement that we all do, in fact, need to re-define each stakeholder group's roles within our complex industry. It is such realization that sets us afloat toward a *smarter* way forward in digital-development pursuits.

The way forward for all stakeholders, fundamentally, is beacons by the availability of a quality-driven true broadband experience. And that requires investment-ranging from investment of time, spent on developing and implementing measureable digital policies, to private-sector companies collaborating among themselves on mutually beneficial, yet individually rewarding, innovative fronts. The fact that, today, at the near-closure of 2015, we have less friction among all the stakeholders than we ever did before, is a healthy indicator that we all are ready to embrace and want to realize a strong digital future for ourselves; for our world. This desire particularly drives telecom operators, which are constantly pursuing the expansion of broadband as well as their own growth through it, not only through their demonstrated will to reduce conflict and shorten traditional distances with other stakeholders, but also by calling for and carrying out innovative, collaborative works across the stakeholder space.

Joint ventures, M&A, digital incubation initiatives, and moving into non-traditional spaces to pursue growth opportunities and socio-economically contribute, are among the notable steps that operators are beginning to take, thus clearly signaling their readiness for the future.

At SAMENA Council, we feel, operators, or any other stakeholders in our complex ecosystem, that truly understand what business knowledge they need to attain, what they require to establish digitization-centric networks, and how intuitive their understanding of customers' needs and wants should be, are the ones to benefit the most from the digital and socio-economic trends that await us over the next few years. Arguably, from the regulatory end, this readiness would be dramatically enhanced if the current economic models underwent transformation; if network planning and timely access to accurate information, and expedience in favorable decision-making were achieved; and if commercial innovation were fostered. From the private-sector's end, if telecom operators accelerated their learning-curve progress in understanding customers' needs and in monetizing their network investments, readiness to achieve both future revenue progress and fulfillment of national digital agendas would be maximized.

The future indeed looks very bright with stakeholder relationship complexities, implementation challenges, growth opportunities, and socio-economic and environmental responsibilities abound.

Yours truly,



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



**David Murphy**  
Chief Commercial  
Officer  
**Yahsat**



yahsat اليه سات

David Murphy is the Chief Commercial Officer of Yahsat, the UAE-based satellite communication operator, a wholly owned company of the Mubadala Development Company.

Appointed as CCO in 2014, David is responsible for the Company's Customer Operations, Marketing and Sales management activities. With over 20 years of experience in commercial leadership roles within the telecommunications industry in Asia, Middle East, The Americas and Europe, David has a proven track record in successfully developing strategic partnerships and customer acquisition programs – leading to growth.

David is a successful change agent with a history of leading emergent markets entry and improving operational efficiency by creating tangible business results. He has multi-functional experience across M&A , strategy, business development, product management and sales & marketing.

David holds a BEng and an MBA from IMD Switzerland.

Q. Please tell us about Yahsat's operations in the region, and core areas of services that Yahsat is presently focusing on?

A. Yahsat was established in 2007 with the aim of offering multi-purpose satellite services, including broadcast and broadband services across the Middle East, Europe, Africa, Central and South West-Asia. Since inception our organization has rapidly developed and today is the 8th largest satellite operator in terms of revenue and, operates two satellites Y1A and Y1B, with a 3rd satellite Al Yah 3, set to be delivered in Q4 of 2016, with the service launch in early 2017.

Our core services include; YahClick, our flagship satellite broadband internet service for unserved and underserved communities; Yahlive, a joint venture with SES, designed to deliver free to air, high-quality TV services to a diverse and culturally rich audience and, YahService, our end-to-end managed solution for customers from both governmental and commercial sectors.

Q. What new broadband service initiatives have you launched within the SAMENA region, especially in large markets like Pakistan?

A. As mentioned, our flagship service is YahClick, which we launched in Pakistan in June 2015, and will help the country accelerate its economic growth and social development by improving access to information, and reducing operational costs for internet access in the most remote and currently underserved areas of Pakistan.

The successful deployment of YahClick in Pakistan, follows on from the roll-out of our services to 13 countries out of a targeted 28-country footprint, seven of which are in sub-Saharan Africa. To-date we have 34,000 subscribers and are providing essential connectivity to SMEs, SOHO, healthcare and education providers, entrepreneurs,

high net worth individuals, remote VIP sites, O&G, NGOs, and connectivity deprived populations in disaster zones.

Q. How do you view the notion of integration of terrestrial and satellite communications? Can it materialize as easily as it is discussed?

A. Both technologies are complementary. Our services are testimony to this and provide a variety of cost effective and high quality solutions that expand the communication ecosystem. This is a virtuous cycle where satellite and terrestrial benefit from each other, with the common purpose of reaching the unserved and underserved in the most cost-effective way possible. An example is the potential development of new backhaul technology in which both Yehsat and Sevis Systems are collaborating. This could see the integration of Yehsat's Ka-band transport layer and Sevis' optimizers. It is designed to provide a cost-effective wireless backhaul solution and other service options such as traffic offload and overflow via satellite.

Q. What types of cross-stakeholder, collaborative initiatives would enable the adoption of industry friendly policies and ensure a sustainable digital future for you and your peers?

A. The industry is facing a lot of changes including transforming business models, external innovations that encroach on satellite business and stringent regulations. Yehsat works very closely with global regulatory bodies to shape policies that create positive value. Yehsat also constantly explores partnerships with industry players and innovators to drive development of satellite products/services and constantly improve our value proposition for sustainability. In addition, we gear our people to recognize digital shifts and respond proactively. This is a key part of our training and development ethos and we extend this outside the

Yehsat organization and to young students, young aspiring engineers and science professionals who will become key stakeholders in the future.

Yehsat is engaged in activities such as sponsoring Abu Dhabi Science Festival, an eye opener for younger people on the importance of technology and digital sustainability. Another Yehsat initiative is the Gulf region's first Master's program focused on space systems and technology, to be conducted at Masdar Institute of Science and Technology, supported by Orbital ATK one of the world's leading aerospace manufacturers. This will help us to find more indigenous solutions and generate more ideas for digital sustainability, as students will develop the knowledge and resources they need to move forward with more innovations.

We have also sent 15 of our top engineers to work with our partner Orbital ATK at their facility in Virginia, USA, where our next satellite Al-Yah 3 is being constructed. This is an exceptional opportunity for national talent to gain first-hand experience into the manufacturing cycle of a technologically advanced satellite. In addition to furthering attendees' knowledge in the field of engineering and aerospace development, the program will also provide employees with valuable insight into the latest satellite industry trends, paving the way for further career development.

Q. What are some of the major business areas that satellite operators of the SAMENA region need to consider when it comes to expansion strategy and competition?

A. Satellite operators in the SAMENA region need to consider all the challenges involved in competing in diverse markets. The key to a successful performance will be targeting different sectors, such as education, banking, public services, health and construction. Expansion of coverage is also vital: Yehsat's coverage area currently comprises the Middle East, Africa, Europe, Central and South West



Asia. However, with the launch of our third satellite 'Al Yah 3', we will also be able to expand in Africa as well as entering the Brazilian market.

**Q.** How has Yahsat historically dealt with competition and the need to create shareholder value?

**A.** As a wholly owned subsidiary of Mubadala Development Corporation, Yahsat has a duty to return value to its shareholder and maintain a strong value proposition for the end customer. It is therefore no different to any other commercial organization seeking to achieve growth in sales and earnings and capture market share. This has involved the conception and implementation of a strategy based on a perceived market opportunity. We see such opportunity through the fact that there are many communities and organisations lacking the connectivity they need to lead better lives and run themselves more efficiently and more securely. There is often little or no communications infrastructure available to them, as they are based in remote areas with rugged terrain, or else have very stringent security requirements. One of Yahsat's key competitive strengths is that it uses state of the art technology to provide its services through a new generation of satellites that leverage the higher

bandwidth available in Ka-band. It is the first satellite service in the region to offer internet connectivity through Ka-band multi-spot beams, with reusable frequencies that allow for more satellite capacity a lower cost. We have also developed an extensive network of highly experienced and well-resourced partners in all of our markets, who have the skills and knowledge to deliver our services with great speed, flexibility and efficiency.

**Q.** What major contributions has Yahsat made to the satellite industry at large, fostering innovation and overall growth?

**A.** The satellite industry has a substantial amount to offer communities, businesses and countries around the world. At Yahsat we see this contribution in several ways;

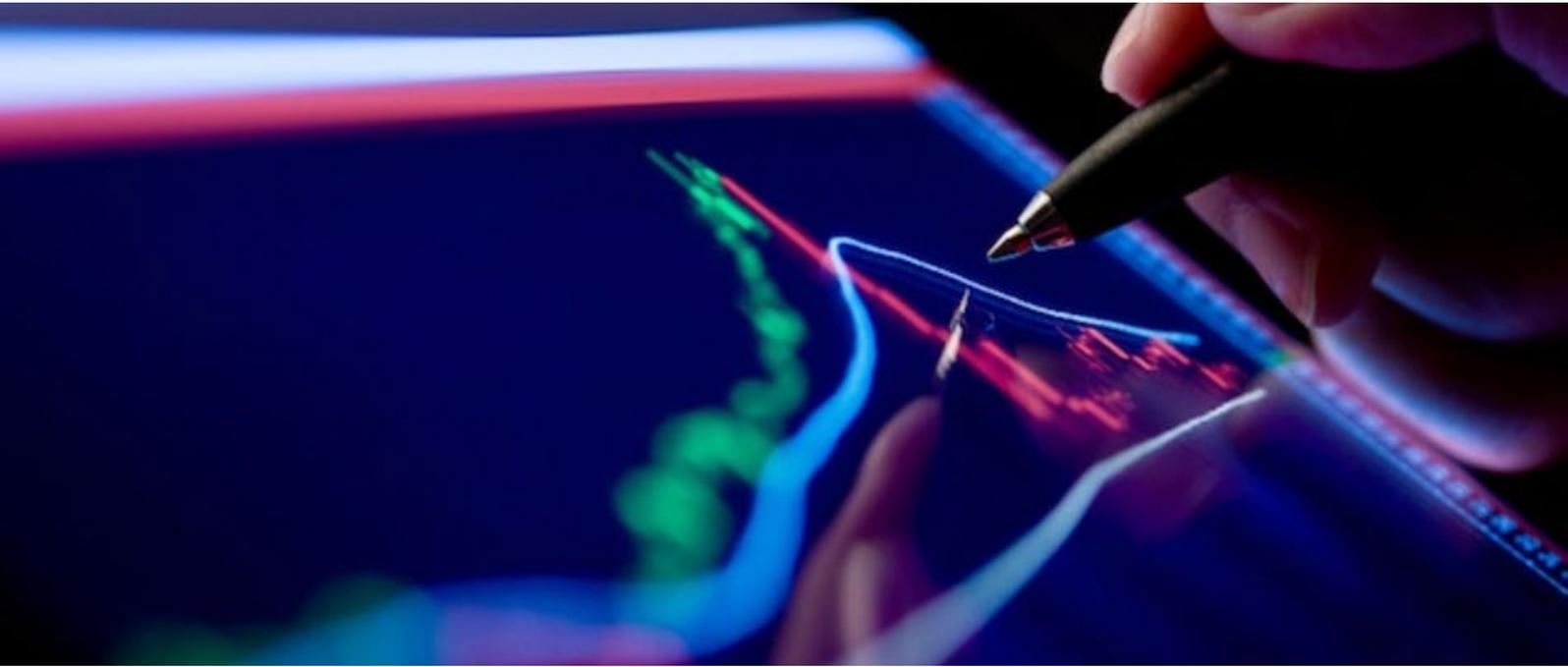
- The provision of satellite broadband services for unserved and underserved communities across the region. A lack of infrastructure remains a barrier to widespread internet connectivity in many countries. Whilst a strong network of underwater cables are being built it will take years for connectivity to

be available and even then, there are potential issues. In order for countries across to sustain economic growth and development, all communities need to be connected and, in order to support countries grow and develop, we believe satellite broadband internet is the way forward whilst governments finalize traditional infrastructure plans.

- The delivery of innovative technology. All our satellites utilize cutting edge technology and design and our 3rd satellite Al Yah 3 is a clear example of this. Al Yah 3 will be the first hybrid electric propulsion GEOStar-3-based spacecraft to be launched at the end of 2016. It provides the benefits of higher power and greater payload capability while still maintaining advantageous launch costs. Once operational, Al Yah 3 will enable the delivery of affordable broadband, directly or indirectly to over 600 million users, specifically covering more than 95% of the population in Brazil and 60% of the population in Africa.
- Contribution to the economic development of the UAE. Yahsat is strongly aligned to Abu Dhabi Economic Vision 2030 and, the launch of our third satellite within less than a decade of operation is a clear signal of the UAE aerospace industry's intentions for the future.

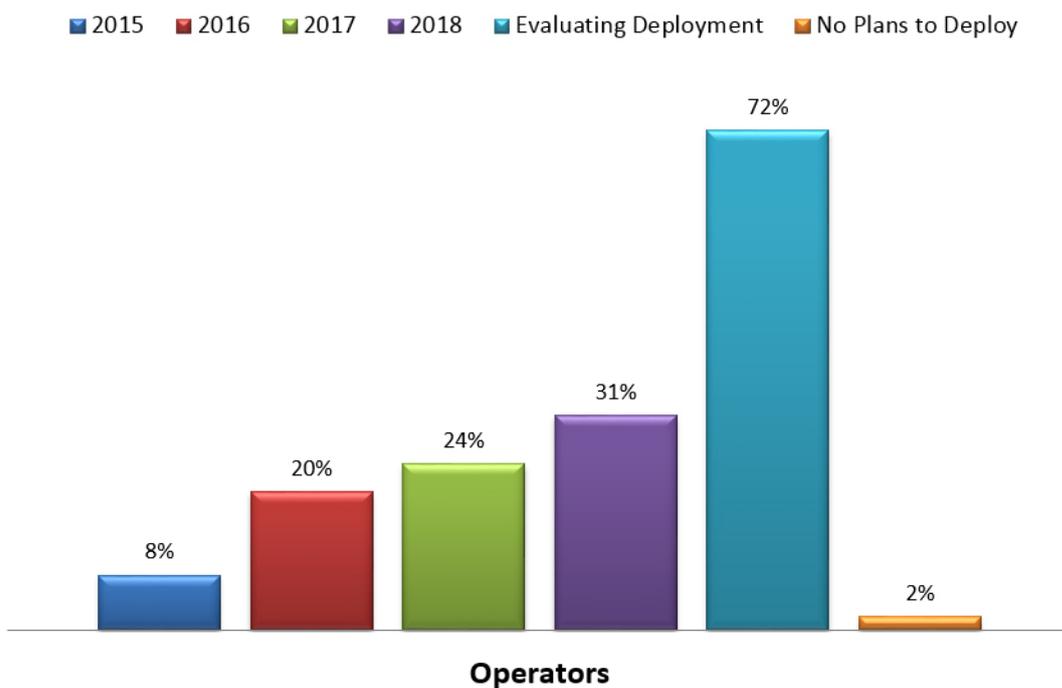
**Q.** How do you view your role in realizing smart cities with sustainable infrastructure, and your developmental role in IoT?

**A.** Smart cities of the 21st century, especially the ones which have not yet been built, will not be able to function through copper and fibre networks alone, but will require additional connectivity to enable the delivery of services to citizens. Our technology and services will be ideal for such applications, because they can be used immediately, they require little incremental or ongoing investment in infrastructure, they are robust and they offer good value for money.



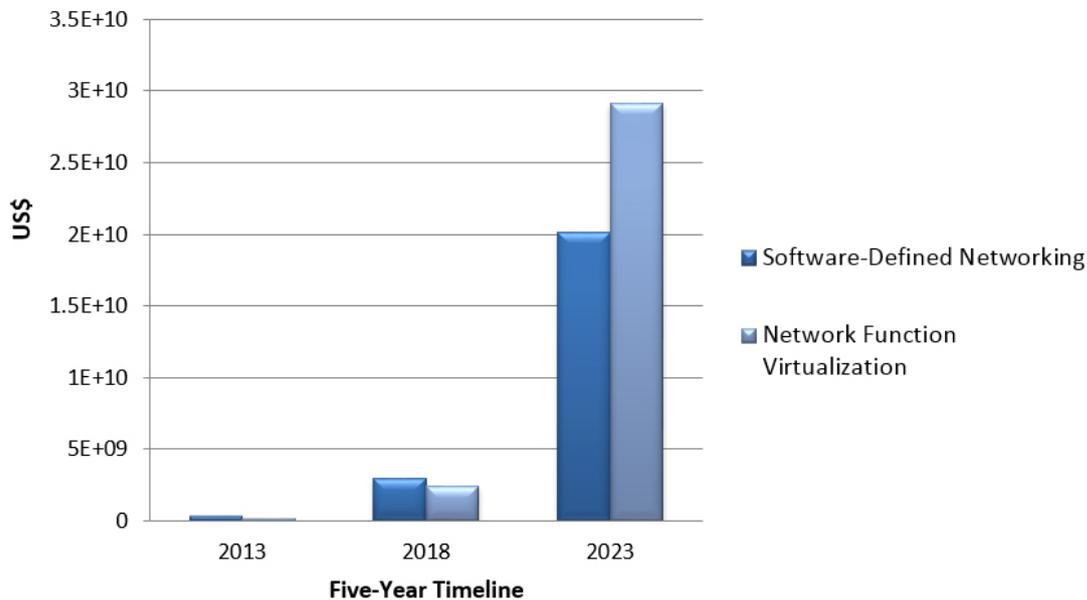
## SDN & NFV FOCUSED BROADBAND INFRASTRUCTURE INVESTMENTS

### Operators' Readiness for SDN Deployment



**Data Source:** Approximated for illustrative purposes from Infotech Research's Global Service Provider Survey 2014

## Global SDN and NFV Revenues due to Operators' Readiness



**Data Source:** Approximated from Analysys Mason's data

### Research Note

There is no one size fits all solution to broadband deployment in any two given markets. Underlying technology models, business models, funding, policy requirements, among other factors, vary across markets, with each having its own telecom infrastructure needs and digital development pace.

The telecom infrastructure market, primarily driven by broadband expansion, capacity enhancement, and network optimization, continues a transformation as new factors come into play. Software-Defined Networking (SDN) and Network Functions Virtualization (NFV) technologies, in this transformational context, could be mainstream options for providers' cloud and network architectures post 2015.

Benefits of NFV implementation include faster time to market, creation and enablement of new services, ability to rapidly scale resources up and down, and lower capital expenditure and operational costs.

SDN helps to improve the programmability and operations of network components and also impacts the way operators build and operate their data center and cloud networks, giving them the ability to deploy low-cost blank standard switches that use independent network operating systems.

Close impact of SDN and NFV technologies on broadband networks, especially from network access point of view, is currently being observed by The Broadband Forum, which is encouraging collaboration among industry groups to ensure best practices and solutions.

Increasingly, communications networks of the near future will see hybrid designs of specialized hardware combined with SDN and NFV elements. Both SDN and NFV are expected to be among the most important network related investments for telecom operators moving forward.



## MEMBERS NEWS

### MEMBERS UPDATES

#### Cisco projects cloud traffic to quadruple by 2019

The fifth annual Cisco Global Cloud Index (2014-2019), released this week, forecasts that global cloud traffic will more than quadruple by the end of 2019, from 2.1 to 8.6 zettabytes (ZB), outpacing the growth of total global data center traffic, which is forecast to triple during the same time frame (from 3.4 to 10.4 ZB). Several factors are driving cloud traffic's accelerating growth and the transition to cloud services, including the personal cloud demands of an increasing number of mobile devices; the rapid growth in popularity of public cloud services for business, and the increased degree of virtualization in private clouds which is increasing the density of those workloads. The growth of machine-to-machine (M2M) connections also has the potential to drive more cloud traffic in the future. "The Global Cloud Index highlights the fact that cloud is moving well beyond a regional trend to becoming a mainstream solution globally, with cloud traffic expected to grow more than 30 percent in every worldwide region over the next five years," said Doug Webster, vice president of service provider marketing, Cisco. "Enterprise and government organizations are moving from test cloud environments to trusting clouds with their mission-critical

workloads. At the same time, consumers continue to expect on-demand, anytime access to their content and services nearly everywhere. This creates a tremendous opportunity for cloud operators, which will play an increasingly relevant role in the communications industry ecosystem." In addition to the rapid growth of cloud traffic, Cisco predicts that the Internet of Everything (IoE)—the connection of people, processes, data and things—could have a significant impact on data center and cloud traffic growth. A broad range of IoE applications are generating large volumes of data that could reach 507.5 ZB per year (42.3 ZB per month) by 2019. That's 49 times greater than the projected data center traffic for 2019 (10.4 ZB). Today, only a small portion of this content is stored in data centers, but that could change as the application demand and uses of big data analytics evolves (i.e., analyzing collected data to make tactical and strategic decisions). Today, 73 percent of data stored on client devices resides on PCs. By 2019, the majority of stored data (51 percent) will move to non-PC devices (e.g., smartphones, tablets, M2M modules, et al.). With the volume of stored data increasing, Cisco predicts a greater demand and use for consumer cloud storage. By 2019, 55 percent of the residential Internet population will use personal cloud storage (up from 42 percent in 2014).

## Domestic unit drives 6.4% rise in Turkcell Group revenue

Turkcell Group has announced that it registered record quarterly revenue and EBITDA for the three months ended 30 September 2015, on the back of strong results from the firm's domestic unit. The group reported turnover of TRY3.364 billion (US\$1.16 billion) for the third quarter of 2015, an increase of 6.4% from TRY3.162 billion in the year-ago period, mainly driven by a 9.9% year-on-year rise in revenue from Turkcell Turkey to TRY3.074 billion, which was attributed to surging demand for mobile and fixed broadband services. On the other hand, Turkcell International revenues were impacted by currency devaluation in Ukraine and Belarus, and fell 22.9% from TRY305 million in 3Q14 to TRY235 million a year later. Group EBITDA was up 10.5% to TRY1.161 billion in the three months to end-September 2015, while net income (excluding non-recurring items) increased 17.8% year-on-year from TRY600 million to TRY707 million. Reported net income, however, declined by 16.5% to TRY630 million, mainly due to higher translation losses and lower interest income earned on time deposits with the lower cash balance despite higher EBITDA. In operational terms, Turkcell's fixed broadband unit Superonline reported 1.419 million subscribers at 30 September 2015, representing an increase of 28.9% year-on-year, as fibre and ADSL customers grew by 24.2% and 36.7%, respectively. Turkcell's mobile customer base stood at 34.2 million at the end of 3Q15 (a decrease of 1.4% year-on-year, but up by 0.6% from the previous quarter), including 16.1 million post-paid subscribers, an increase of 8.8% from 14.8 million twelve months earlier.

## Sudatel to invest US\$267 million to construct national broadband network

Sudatel, a leading telecom group operator in Sudan and West Africa, announces the construction of the "National broadband Network with an investment of USD 267 Million to be financed by China Export-Import Bank. Sudatel CEO Tarig Hamza Zainelabdin

signed the framework agreement for this project in China, in the presence of Sudan's President and several Sudanese government officials. The deployment of the new national fiber network will connect national cities as well as neighboring countries Chad, Libya and Central Africa. The new network will also connect the international circuit between the Red Sea and Europe through a new international transmission link. "The National Broadband Network is a strategic project planned to construct the broadband infrastructure in vast areas of the country and is expected to enable and provide the needed infrastructure for the country's E-government," commented Tarig Hamza Zainelabdin, Sudatel Group CEO. "According to several studies, this new major network infrastructure will support the increase in the broadband penetration that subsequently will be linked to an increase in the country's GDP," added Zainelabdin. The new network infrastructure project will also support the economic and social development of Sudan. GDP growth is expected to grow as the network will cover more areas and more job opportunities will be created from the project where the implementation and construction will require massive manpower. CITCC, a large state-owned information integrator and one of China Telecom arms, will be the main contractor for this project and is involved in several infrastructure projects in Sudan.

## STC launches Big Data in collaboration with Teradata

The Saudi Telecom Company (STC) launched big data and advanced analytics in collaboration with Teradata which specializes in data storage and analytics. STC hopes the project will generate creative ideas allowing it to leverage knowledge gained about customer experiences, needs, and observations through a number of communication channels. Teradata has been working with STC since 2005. The company is a renowned global leader operating big data and advanced analytics, management of data storage systems to build advanced analysis, fraud detection using social media channels, and measuring customer experience indicators. STC views

big data and analytics as one of the most effective tools in understanding customer needs and their experiences, in addition to being an effective asset for the growth of sustainable business

## Mobily sent about 90 Million awareness SMS in collaboration with government organizations

Huawei and the African Etihad Etisalat Mobily has sent recently in collaboration with some of the government organizations in the Saudi Kingdom about 90 million awareness SMS in various regions as part of Mobily's corporate social responsibility programs, which contribute to the awareness of Saudi society in several aspects. Mobily managed through this program to activate the concept of a real constructive partnership between the public and private sectors for the benefit and interest of the various segments of local community. The company's efforts in this program along with the efforts and plans of some government agencies aimed to educate citizens in various fields, such as directions, health care, legal matters that aim to improve various economic and social sectors. Mr. Mohammed Albelwe, Executive General Manager Corporate Communications and PR at Mobily said that the integration of roles between the private and public sectors contributes positively to define the needs of our community and to find innovative solutions to apply successful social responsibility programs. In this respect, Mobily continues firmly in its constructive partnership with government agencies to serve our homeland and the citizen's interests. Mobily is working presently on the study of several constructive means that would serve critical social issues in cooperation with other parties that are interested to execute effective social responsibility programs, in addition to the current awareness messaging program, which will be completed by the company on several phases to be distributed over the coming period, depending upon the needs and interest of the community.

## Zain Kuwait partners with Huawei to build virtual network strategy

Zain Kuwait—Kuwait's largest mobile operator—has signed a business contract together with Huawei—a leading global ICT solutions provider—to use the power of virtualized network technologies to deliver more dynamic, flexible, and efficient mobile



services to its customers over the next three years. The agreement will focus on the application of a cutting-edge trend in telecommunications known as Network Function Virtualization (NFV). It is a concept that is still fairly new to the Middle East—Zain Kuwait is the first regional operator to practice NFV on a live network—and which combines traditional telecommunications hardware with contemporary cloud-based and software-driven IT solutions. The result is a network which can use virtual processes to streamline operations, utilize resources more effectively, and which can be scaled quickly to meet with customers' rising service demands. "The concept of Network Function Virtualization is expected to change the ecosystem of modern telecommunications," says Omar Al Omar, CEO of Zain Kuwait. "We are excited to work closely with Huawei on our virtualization strategy and to bring it live onto our networks as soon as possible. In particular, Huawei's breadth of solutions and managed services can really help us to advance our overall network evolution strategy." "One of the great features of this project is that the NFV approach can provide operators with more flexibility in opening up their network's capabilities—enabling them to pioneer new services faster and more efficiently to the end user," said Mohamad Sharara, Head of Zain Key Account at Huawei. "Zain Kuwait has long been at the forefront of mobile service development. This is a testament to that vision. It pushes the boundaries of what we have seen

in the Middle East to date, and we will take this NFV project as a successful case study in considering an expansion to other Zain operating companies." In terms of technical deployments, the latest contract will see Zain Kuwait leverage a full suite of Huawei NFV solutions including cloud data centers, virtualized evolved packet cores (vEPC), a virtualized IMS core network, SDM hardware and software, and test bed hardware for the network. In addition, Zain Kuwait has agreed to a three-year Managed Services contract with Huawei which will see Huawei experts assist Zain directly in setting up and managing the new solutions on top of NFV architecture. The agreement is part of Zain's overall ICT transformation strategy over the next decade. This includes plans to evolve its current IT infrastructure to cloud data center and develop more digital services. Zain already utilizes a number of Huawei solutions and services to meet these ambitions, both on the IT level and in terms of telecommunications networks. Earlier this year the two companies unveiled plans for a new strategic cooperation that will trial and implement high-speed 4.5G services on Zain Kuwait's network over the next three years. Zain has also established a Joint Innovation Center with Huawei in Kuwait to serve as a research hub for the advancement of future mobile broadband services and applications.

## Huawei commits \$1 billion to Development Enabler Plan

Huawei will make up to \$1 billion available to support developers under its new Development Enabler Plan, which is focused on building an open ICT developer ecosystem. At the vendor's first Huawei Developers Congress (HDC), the company announced it will make the investment to implement its new plan over the next five years. As part of the process, Huawei plans to build a developer enabler platform and forge business partnerships with its developers. The platform will be called eSDK, and will be designed to help developers accelerate technological information. It will be based around the LEADS concept - Lab-as-a-Service, end-to-end, agile, dedicated and social. Developers contribute to Huawei's ecosystem in technology areas

including cloud computing, big data, the IoT, mobile broadband, SDN and BYOD, commented Huawei president of products and solutions Ryan Ding. "Huawei has focused on ICT infrastructure, opened up its innovative and leading ICT solutions to developers, and built an open environment and enablement platform for the carrier and enterprise markets," he said. During the event Huawei shared details of previous success stories with developer partners, such as those designing open cloud services based on the company's Enterprise Cloud. The company also signed co-operation agreements with partners such as Microsoft and Richfit.

## Cisco network infrastructure to power the UAE government's smart cloud

Cisco has announced that it is deploying a Cisco Network infrastructure to power the Telecommunications Regulatory Authority's (TRA) Electronic Federal Network (FedNet), which will host the UAE Government's Smart Cloud and will connect all Federal Government entities in the UAE. This project was awarded to Cisco through two services providers. FedNet is a secured government platform that will offer secured connectivity and shared services to more than 42 federal government entities in the UAE. It will be an integral component of the wider UAE Mobile Government Initiative, which seeks to create the necessary national infrastructure to enable the provision of all government services via mobile platforms. The FedNet platform is rightly set to offer them the agility and the speed that private enterprises enjoy from the public clouds, without compromising the Federal Government's security policies. Cisco will also build a Network Operations Center and a Cloud Command Center to operate the FedNet infrastructure. Once implemented, FedNet will provide secured communication services such as Government-to-Government (G2G), secured internet, e-mail, voice and video services. FedNet will be the very first cloud platform to offer IaaS (Infrastructure as a Service) to Federal Government entities.

## Saudi Telecom deploys high-capacity international mesh network

Saudi Telecom Company (STC) is deploying a resilient, next-generation network (NGN) based on Ciena's converged packet-optical platforms, as well as GeoMesh networking technology. This network solution maximizes the potential of STC's existing global submarine and terrestrial investments by enabling flexible, high-capacity wholesale and enterprise Carrier Ethernet and OTN for Internet connectivity, datacenter interconnect and high-bandwidth cloud services. STC, based in the Kingdom of Saudi Arabia (KSA), is the incumbent and the largest telecommunications services provider in the Middle East and North Africa Region. Its international presence spreads across nine countries and includes an international data network that extends to Europe and Asia. Packet-Optical platform, equipped with the WaveLogic 3 Extreme chipset and 15 Terabit (Tb/s) hybrid packet OTN switching, together with the 6500 help increase the capacity, agility and reach of STC's network, ensuring operational simplicity and scalability while supporting the evolution toward software defined networking (SDN). E-Suite packet switch modules on both the 6500 and 5430 allow STC to maximize the number of high speed Ethernet services carried on the network. Ciena's GeoMesh submarine solution ensures survivability even in the case of multiple network outages or submarine fiber cuts, with restoration within 50 milliseconds. As a result, STC can offer applicably vehement service level agreements (SLAs) tailored to its wholesale and enterprise customer requirements. GeoMesh also allows STC customers to take advantage of faster speeds, reduced latency and scalability for seamless global connectivity solutions. Additionally, Ciena's OneControl Unified Management System, OneConnect Intelligent Control Plane and OnePlanner Unified Design System – all part of Ciena's OPn network architecture – give STC exceptional control over the entire network and enable service activation in a matter of seconds. As a member of Ciena's BizConnect program, STC also benefits from marketing support,

service enablement and training. "Transforming our network to deliver comprehensive and reliable services demonstrates STC's dedication to its customers. Being a customer-centric operator, STC offers innovative and high-quality services over its leading state-of-the-art network infrastructure. STC ICT regional leadership is emphasized by the deployment of NGN solutions like Ciena's packet-optical and GeoMesh solutions. These give STC the scalability and speed of services deployment, in tandem with lowering operating costs and supporting STC's fierce evolution toward NGN capabilities." - Dr. Homoud Al Kussayer, Vice President for Wholesale at STC "This deployment further cements our leading position in the submarine market. STC's strategic network approach coupled with Ciena's industry-leading solutions ensures that it has the capacity, agility and reliability needed to support current and future web-scale demands."

## Ciena offers 'self-service' programmability with new Blue Planet architecture

Ciena has unveiled enhancements to its Blue Planet network orchestration software to help operators expand and accelerate the delivery of new services across both virtual and physical domains. The enhancements enable service providers to accelerate their transformation from closed and siloed network architectures to more open, on-demand software-driven networks. Ciena said its Blue Planet software helps service providers automate services to reduce operational costs, eliminates network complexity and drives greater competitive advantage through a level of service programmability previously unachievable. Blue Planet software advances Ciena's OP network architecture approach and delivers a number of critical benefits to service providers including new container-based, micro-services architecture allows rapid customization and accelerated development of new applications, including those from third-parties and based on open-source. Blue Planet is also said to loosely couple software functions within these containers to create and enable SDN management and control, NFV orchestration, and multi-domain service orchestration.

The new architecture also enables disaggregation of the software stack, enabling providers to add their own services, the company said.

## Ooredoo Qatar tests 590Mbps LTE-A

Ooredoo Qatar, Nokia Networks and Netgear have announced a 590Mbps speed test using LTE-Advanced (LTE-A) Category 11 technology on Ooredoo's network, which the partners claimed as a record for the Gulf Cooperation Council (GCC) region. The speed was achieved by aggregating 60MHz of spectrum across three bands and applying 256QAM higher order modulation. Ooredoo recently signed an agreement with Netgear to launch a new range of LTE and LTE-A smart devices in Qatar, and the 590Mbps result was achieved on the Netgear Aircard AC810S mobile hotspot, which supports tri-band carrier aggregation (in Cat 11 mode enabling speeds of up to 600Mbps). Plans are in place for Ooredoo to launch the device commercially in 2016. Coinciding with the speed test, Ooredoo announced the commercial launch of the LTE-A Cat 6 Netgear AirCard 790S Mobile Hotspot, which uses 802.11ac Wi-Fi and carrier aggregation (CA) technology to deliver download speeds of up to 300Mbps. Ooredoo Qatar has more than 1,030 4G LTE base station sites, and continues to add more every month. In addition, it has completed the upgrade of 544 outdoor sites to LTE-A ('4G+') and upgraded 182 indoor sites to 4G and four indoor sites to 4G+, including malls, business centers, residential towers and hotels.

## STC sees the need for open platforms to reduce barriers to innovation

The CEO of Saudi Telecom Company (STC) urged the region's mobile industry to focus on three key areas, warning that failure to do so may jeopardize the ability to benefit from booming demand for mobile data. Setting the scene, Khaled Biyari asked whether the region's 72 per cent annual mobile traffic growth can be sustainable. "We used to talk about terabytes, now we've changed the units to exabytes. We forecast 1.5 exabytes per month in MEA by 2020. But revenue from data is just 20 per cent, and it's taking

up 60 per cent of capex." To support what he calls the "digital revolution", Biyari repeated the familiar call for more spectrum, suggesting that 600-800MHz of additional spectrum is needed globally by 2020. And he wants to see the introduction of "fair usage requirements," controlled by the operators. "We need to be fair to everybody. Operators are the first to worry about their customers, so the regulator is not correct to move to a customer advocacy situation... The way we are able to price our products fairly is so important to the future of our industry." Thirdly, the STC boss said it is necessary to encourage open platforms to reduce barriers to innovation. "This is fundamental. GSM as a technology was successful because it is an open standard." All this, claimed Biyari, will ensure operators are well positioned to inject capital into their networks. "The economic model will collapse if operators are not able to invest," he warned

## TURKCELL joins SAMENA Telecommunications Council as Member

Turkcell, an integrated telecommunications and technology services provider based in Turkey, has joined the SAMENA Council. Turkcell ranks amongst the region's most advanced service providers with a global vision. "Today's information society requires a different model of development – a model that focuses on innovation, solves problems with locally-generated ideas, and encourages regional collaborations. At Turkcell, we place great emphasis on understanding this new, innovative landscape and creating locally, regionally and globally relevant solutions using cutting-edge technology. With our network investments, 5G R&D partnerships, and focus on connected homes and smart cities, we are among the players that define technologies of the future", said Kaan Terzioğlu, CEO of Turkcell. "SAMENA Council brings together some of the most important players in our sector, providing a platform for successful exchange of ideas and know-how as well as promoting efficient dialogue between regulators and operators. We are happy to join this distinguished group, and we look forward to sharing our experience as an integrated communication and

technology services company that serves almost 70 million customers in 9 countries." CEO of SAMENA Council, Bocar BA said that "Turkcell is amongst the most ambitious and futuristic telecom companies, with a visionary leadership. This decision to join SAMENA Council, which is the region's premier industry representative body for telecom operators and service providers, demonstrates that operators that can presently see through into and beyond the fifth-generation of our technological evolution, clearly understand the new roles that need to be assumed in the evolving business landscape. With Turkcell's active participation within the SAMENA Council's community, we hope to achieve new milestones in telecom operator representation, regionally, and contribute to the growth of private sector, worldwide." "We warmly welcome Turkcell and its CEO Kaan Terzioğlu in our community of leaders and thinkers", Bocar expressed. Through this membership, Turkcell will be able to leverage SAMENA Council's regional and international reach as well as advocacy support, expressing its corporate vision, addressing industry needs and contributing to the debate on business transformation challenges that demand closer communication among the operators of the SAMENA region.

## Etisalat to enhance government operational efficiencies

Etisalat has signed a Memorandum of Understanding, MoU, with the Ajman Department of Economic Development, Ajman DED, to enhance the government entity's operational efficiencies through implementation of advanced telecommunications and ICT services. The agreement was signed by Essa Al Nauimi,



General Manager, Ajman Economic Development Department, and Abdul

Aziz Taryam, CEO Advisor and General Manager - Northern Emirates, Etisalat, at the telco's stands on the sidelines of GITEC Technology Week 2015. The MoU will enable Ajman DED to achieve a sustainable economic development by leveraging Etisalat's best-in-class telecommunications and technology services and a wide range of professional and smart services. Under the agreement, Etisalat will employ dedicated professional teams to build the necessary infrastructure for Ajman DED to develop IT solutions and support the department's conversion to a "smart" economic department.

## Cisco supplying SDN and NFV to Softbank

Softbank, which owns controlling interest in Sprint, said this week it will use Cisco's SDN and Network Functions Virtualization (NFV) technologies in its cloud VPN service. The operator will deploy Cisco's Network Services Orchestrator, based on technology from the Tail-f acquisition, to provision and service chain physical and virtual network elements. Softbank will also use Cisco's new Virtual Topology System (VTS) for automating VXLAN provisioning through BGP-EVPN. Cisco says this enhanced architecture will reduce service provisioning time from weeks to minutes, and enable more flexibility in upgrading virtual network functions. Software-controlled service chains steer traffic through the appropriate Layer 4-7 security functions based on flow, customer profile, service type or other characteristics. VTS will be used to "stitch dynamic service chains within the data center," Cisco said. SoftBank's White Cloud SmartVPN uses physical and virtual elements from multiple vendors. It provides a self-service online portal to assist customers in selecting security policies and network services to support business requirements. Separately, Cisco opened an Innovation Center in Berlin this week to showcase digital development, particularly on its Internet of Everything offerings. The focus at the new openBerlin Innovation Center is on manufacturing, logistics and transportation verticals. Cisco intends to invest close to \$30 million in the new site over the coming years. It is the ninth Innovation Center the company's established worldwide.

## Qualcomm to sell Vuforia AR business for \$65M

Qualcomm is to offload its Vuforia augmented reality unit, against the backdrop of a corporate realignment which will see it focusing on its licensing and processor activities. Qualcomm Connected Experiences is offloading the business to IoT platform company PTC for \$65 million, with the new buyer pledging to continue investment and support for the platform and its developer ecosystem. According to PTC, Vuforia “enables apps to see and connect the physical world with digital experiences that demand attention, drive engagement, and deliver value”. It has a developer ecosystem in 130 countries, powering more than 20,000 apps with more than 200 million installs worldwide. “Because of what IoT is enabling, more and more products are now a mixture of digital and part physical content. So, naturally, the ways in which we interact with these products will evolve toward a mixed-reality model that blends physical and digital interactions,” Jim Heppelmann, CEO of PTC, said. Qualcomm announced a strategic realignment that will see “fundamental changes” in July 2015, indicating that this will lead to the curbing of investments beyond its core silicon and licensing activities. The company has previously made numerous forays into adjacent areas – such as its MediaFlo mobile broadcast activities, Mirasol display business and wearables among many others, as it looked to drive innovation. But these activities are essentially costly bets on where the market may be going, which have often failed to pay off. “Qualcomm always looks to push the boundaries of what is possible with computer vision. By leveraging the company’s mobile technology leadership, Vuforia has become the platform of choice for developers of augmented reality applications,” Derek Aberle, president of Qualcomm said. While it is not clear how much cash has been pumped into Vuforia, PTC said the business’ annual revenue is “currently not material” to its financials. The transaction is expected to close by the end of 2015, subject to closing conditions.

## Etisalat tests virtual CPE with NEC/Netcracker

NEC and NetCracker Technology announced that Etisalat UAE has completed a series of comprehensive virtual customer-premises equipment (vCPE) trials. The vCPE solution was provided through NEC’s and NetCracker’s joint business brand, NEC/NetCracker SDN/NFV Solutions, and demonstrated new ways to optimize customer experience through an innovative self-service portal. The companies said the proof of concept validated the NEC/NetCracker vCPE solution’s ability to move highly complex IP and connectivity functionality from end-user gateways to Etisalat’s data center, which will reduce complexity for residential customers and provide them with more control over services. Etisalat’s deployment of the vCPE solution will enable it to experience a number of critical advantages, including the ability to provide next-generation connectivity without deploying highly complicated equipment at customer locations, resulting in reduced costs and fewer truck rolls. NEC and NetCracker demonstrated several highly sophisticated use cases for Etisalat, including the ability to let customers personalize device- and subscriber-specific usage controls through an easy-to-use self-service portal. NEC and NetCracker also showed how customers can extend their LAN to enable cloud-based L2 services and content, as well as the vCPE solution’s ability to deploy virtual firewalls.

## DE-CIX launches service in Istanbul and acquires IST-IX

DE-CIX today launches its new Internet exchange in Istanbul, Turkey. DE-CIX Istanbul will be operated by DE-CIX Istanbul Network Connections LLC, which is a wholly owned subsidiary of DE-CIX International AG. The new Istanbul exchange will deliver carrier and data center-neutral Internet exchange services in Turkey, the Caucasus region, Persia and

the Middle East. DE-CIX Istanbul will locate the first presence of its new platform in the MedNautilus building, a multi-tenant and carrier-neutral facility. The building houses colocation operators across several floors, including MedNautilus (part of the Telecom Italia Sparkle group), Turkcell/Superonline and Verizon. All of the other data center floors will be DE-CIX-enabled. The building is also served with capacity from all of the major national Turkish and a large number of international carriers. This includes being a landing station for the MedNautilus subsea cable backbone, which serves the Mediterranean basin. Because of this strong connectivity into the MedNautilus facility, customers will have an abundant and diverse community of carriers to choose from starting Day One of operations. Furthermore, the DE-CIX service will be available in more than fifteen additional facilities across the city of Istanbul. Network operators can also take advantage of the DE-CIX Istanbul service in three other cities across Turkey, including Ankara, Bursa and Izmir. In addition, DE-CIX International acquired the Istanbul Internet Exchange (IST-IX), founded by Terremark. IST-IX will be transferred to DE-CIX and upgraded to the DE-CIX Apollon platform, DE-CIX’s 100GE-enabled exchange backed by best-in-class Service Level Agreements. “DE-CIX Istanbul will become a network ‘center of gravity’ in a part of the world that is so important to the Internet,” states Harald A. Summa, DE-CIX CEO. “We are combining a strong multi-carrier data center environment with DE-CIX Apollon and our experience in building out successful Internet exchanges. We intend to create a peering ecosystem that consists initially of both national and regional players that will evolve into an attractive world-class interconnection environment for the entire region.”



## REGIONAL NEWS

### REGIONAL UPDATES

#### Saudi Arabia Arab World's most competitive cellular market

The Arab Advisors Group released the results of its Cellular Competition Intensity Index 2015 in September 2015. Saudi Arabia maintained its rank as the Arab World's most competitive cellular market for the fifth consecutive year. By August 2015, the top four competitive Arab cellular markets; Saudi Arabia, Jordan, Palestine and Iraq maintained their 2014's ranks in the Cellular Competition Intensity Index; Saudi Arabia scored 85.08%, followed by Jordan with 75.92%, Palestine came next with 75.19% followed by Iraq with 69.76%, Bahrain with 65.33%, and Egypt with 64.48%. Tunisia maintained its 2014's seventh rank with 62.45%. Kuwait came next with 61.43%, followed by a drop in the rank for Morocco, Oman and Algeria with 61.52%, 61.21% and 60.23% respectively. Yemen obtained its twelfth rank with a score of 57.97%, followed by Sudan (57.39%), Mauritania (56.31%), United Arab Emirates (51.32%), Qatar (50.80%), and Lebanon (41.83%). Libya stepped up with a score of 35.20% followed by Syria with 34.99%. The Cellular Competition Intensity Index is relative in nature as it compares the state of every market relative to other markets. As such, even if a market's absolute level of competition improved, its score in this relative index will also depend on how other markets

developed. For the fifth year in a row, Saudi Arabia maintains its first rank in the Cellular markets' competition levels in the Arab world. Saudi Arabia score benefited from four operational and licensed MNOs in addition to two operational MVNOs. Saudi Arabia scored fully for the availability of smartphone plans, corporate offers, 3G/4G LTE and International Long Distance competition.

#### Oman homes to be linked to high speed fibre broadband

An estimated 225,000 homes in the capital region of Oman will be connected to a new fiber-based broadband network under a deal reached by Oman Broadband Company (OBC) with Singapore's ViewQwest. A well-known fiber broadband service provider, ViewQwest is providing its local knowhow to state-owned OBC which plans to roll out fiber links to some 90 per cent of homes in Muscat and 35 per cent of other governorates. This equates to some 225,000 homes in Muscat, which is expected to start trialing Internet surfing at speeds of up to 1Gbps -- or 100 times faster than current technologies on the 45th anniversary of Oman's National Day. Commercial launch is slated sometime next year. "We are inspired by Singapore's strategic approach to the implementation and we hope to emulate that success

in Oman as we connect homes and offices nationwide," said Ghaith Al Darmaki, program director of Oman's sole fiber broadband service provider, Awasr.

## Zain Kuwait to offer M2M services over Vodafone platform

Zain Kuwait has launched machine-to-machine (M2M) services for corporate customers over Vodafone's M2M platform, following the expansion of the two company's existing Partner Market Agreement, Zawya reports. The launch of M2M services for enterprises looking to implement Internet of Things (IoT) is in line with Zain's strategic vision to enrich the bundle of solutions it offers to corporate customers.

## Former ITU secretary-general to lead Smart Africa

The former secretary-general of the International Telecommunication Union (ITU), Dr. Hamadoun Toure, has been appointed director general of Smart Africa. This is one of the major decisions taken in parallel of the conference Transform Africa 2015 held in Kigali from 19 to October 21, 2015 with the participation of 2,500 delegates from 80 countries. Chaired by President Paul Kagame, the board of directors of Smart Africa includes the presidents of Burkina Faso, Gabon, the Mali, Kenya, Uganda, the Ivory Coast, South Sudan and Chad. To this group is to be added the African Union Commission and the general secretariat of the ITU. The Council, which was held on the sidelines of the conference Transform Africa 201, has decided to activate the fund for the financing

of fellowships and has taken note of the decision of the Government of Rwanda to put US\$1 million available to the permanent secretariat of Smart Africa, based in Kigali. Regarding the scholarships, the Council welcomed the pledges of South Sudan, Burkina Faso, Rwanda, Gabon and the ITU. The choice of Dr. Hamadoun Toure, secretary-general of the international Telecom organization until 2014, expresses the desire of the board of directors of Smart Africa to give a new dimension to its activities. Satellite systems Engineer, non-executive director of the board of directors of Inmarsat since March 2015, Dr. Toure is currently one of the most influential Africans in the field of telecommunications. His three-year term as executive director of Smart Africa takes effect from January 2016.

## Two-day blackout costs cellcos around USD10m

Pakistan's cellcos are estimated to have incurred losses of around PKR1 billion (USD9.56 million) in lost revenue after services were temporarily disabled for two days, ProPakistani writes. Mobile voice and internet services were disabled for reasons of national security during an Islamic festival, the celebrations of which have been the focus of sectarian violence and terrorist attacks in the past. 68 districts were affected by the blackout, impacting tens of millions of mobile subscribers, with cellcos estimating their losses to be around PKR1 billion, whilst the government lost out on around PKR300 million in potential tax income from calls and messaging. According to TeleGeography's GlobalComms Database, controversial cellular blackouts were used heavily in 2012-13, with one cellco claiming in March 2013 that it had been ordered to switch off its network no fewer than 24 times. The rules for ordering the closures were subsequently tightened, however, and the measure is now employed only once or twice each year, typically on days deemed most susceptible to terrorist attacks due to their religious or cultural significance

## UAE aims to be first with nationwide 5G in 2020

The United Arab Emirates (UAE) is throwing its hat into the 5G ring, claiming that it will be the first country to deploy the future wireless technology nationwide. "We are ready to take the big leap into the future of the telecom industry with the UAE becoming the world's first nation to roll out the 5G network," Ahmad Julfar, CEO of Etisalat, said this week at a GSM Association (GSMA) event in Dubai. The nationwide deployment of the 5G network will be hung around the Expo 2020 event in Dubai, which starts in October 2020. Etisalat has a 5G development deal in place with Ericsson AB. The 5G specification hasn't yet been set in stone, but the end result is expected to be a wireless system that's tens of times faster than current 4G networks, offering gigabit-per-second download speeds over the air. For the consumer, this would mean that an HD movie could be downloaded to a compatible 5G smartphone. All of this is at least a few years in the future, but that isn't stopping Asian and other operators from racing to be the first with some kind of 5G deployment. NTT DoCoMo Inc. is plotting a 5G deployment for the Summer Olympics in Tokyo in July 2020. SK Telecom in South Korea is also eyeing a 2020 timeframe for initial deployments. Recently, Verizon Wireless has become very aggressive on its 5G timeline. The US operator is plotting 5G field trials in 2016, and there have even suggestions of initial deployments in 2017, which could happen before 5G proofs-of-concept are completed. Not all US carriers are so bullish though: Sprint Corp. suggested that 5G will arrive after 2020 in the US in a recent presentation.

## UAE gets fixed network sharing; Du expands M2M with Vodafone

The Telecommunications Regulatory Authority (TRA) of the United Arab Emirates (UAE) has announced that fixed network sharing is now active across the country, allowing Etisalat and Du to share infrastructure and market their services in new locations previously only served by their rival. Du has confirmed that UAE residents looking to switch provider could be up and running on its network within



seven days. The launch comes after some six years of negotiations between the regulator and the two telcos. 'It's an excellent step that we are giving the customer the opportunity to choose,' The National quoted Majed Al Mesmar, deputy director general of the TRA, as saying. 'The quality of service being offered will definitely change. Those who ignore it will lose customers now that the other operator has the same chance.' The network sharing agreement does not yet, however, cover pay-TV services, meaning those customers on multi-play packages which include TV are unlikely to be switching their voice and internet provider as this would see them losing their bundled discount. It is expected that the deal will be expanded to include pay-TV services by end-2016. Separately, Du has announced an expansion to its partnership with UK-based Vodafone Group which covers machine-to-machine (M2M) services for UAE businesses. The telco says the partnership enables it to offer enhanced M2M services to enterprises looking to implement Internet of Things (IoT) services by pairing its local market knowledge with Vodafone's M2M platform and expertise. Du says it will initially focus on connected car opportunities such as enhanced safety, connecting drivers with garages and emergency services, and in-car infotainment. mHealth applications for M2M will also be explored to improve remote care for patients and bring greater efficiencies for healthcare providers.

## Omantel and du partner up for IP television service

Oman Telecommunications Company (Omantel), the largest telecom operator in the Sultanate and the pioneering leader in the digitalization, has signed a partnership agreement with the UAE's du, to provide its IPTV (Internet Protocol television) service platform in the Sultanate. Through this regional first tie-up between the operators, Omantel will be able to launch IPTV service in its local market using du's IPTV platform, thereby reducing its time-

to-market and offering its customers a world-class IPTV experience. The partnership agreement provides an opportunity for du to expand the regional reach of its IPTV platform. "We strive to further enhance our leadership of digitalization in the Sultanate through different aspects. We are pleased to enter into this partnership agreement with du which will enable us to offer our customers state-of-the-art IPTV service," said Talal Said Marhoon Al Mamari, chief executive officer of Omantel. "As the owner of Oman's largest IP network, we believe IPTV provides a unique opportunity to offer our customers unmatched broadcast quality for on-demand entertainment services," he added. "Our partnership with Omantel marks a significant step for us as we continue in our steadfast growth throughout the region. We are now a regional ICT player, having diversified from pure telecommunications, and we are expanding our offerings for regional incumbents," said Osman Sultan, chief executive officer of du. This new partnership is demonstrative of the collaboration potential between regional operators that can reduce costs, and create a new order where operators do not have to build infrastructure from scratch, but can rely on partners to launch new services and sharing best practices and offerings.

## Ooredoo Qatar tests 590Mbps LTE-A

Ooredoo Qatar, Nokia Networks and Netgear have announced a 590Mbps speed test using LTE-Advanced (LTE-A) Category 11 technology on Ooredoo's network, which the partners claimed as a record for the Gulf Cooperation Council (GCC) region. The speed was achieved by aggregating 60MHz of spectrum across three bands and applying 256QAM higher order modulation. Ooredoo recently signed an agreement with Netgear to launch a new range of LTE and LTE-A smart devices in Qatar, and the 590Mbps result was achieved on the Netgear Aircard AC810S mobile hotspot, which supports tri-band carrier aggregation (in Cat 11 mode enabling speeds of up to 600Mbps). Plans are in place for Ooredoo to launch the device commercially in 2016. Coinciding with the speed test, Ooredoo announced the commercial launch of the LTE-A Cat 6 Netgear AirCard 790S Mobile Hotspot, which uses 802.11ac Wi-

Fi and carrier aggregation (CA) technology to deliver download speeds of up to 300Mbps. Ooredoo Qatar adds in its press release that it now has more than 1,030 4G LTE base station sites, and continues to add more every month. In addition, it has completed the upgrade of 544 outdoor sites to LTE-A ('4G+') and upgraded 182 indoor sites to 4G and four indoor sites to 4G+, including malls, business centers, residential towers and hotels.

## Du and Nokia demo 10Gbps 5G

The United Arab Emirates (UAE) telco Du has signed a memorandum of understanding (MoU) with Nokia Networks for the development of 5G technology, while the two firms have also given what the say was the first live demonstration of 10Gbps 5G services in the Middle East. A Nokia press release says the 5G technology will support a range of 'smart city use cases', from IT to automotive, manufacturing, healthcare, agriculture and entertainment. The vendor said its 5G demo system used very high bandwidth smart antennas and next generation multi-carrier modulation to achieve ultra-low latency and peak data rates of 10Gbps. It added that the 5G radio proof-of-concept was developed in cooperation with National Instruments (NI).

## Saudi public and private sectors to receive innovative e-services

ELM, a leading provider of innovative electronic solutions and government support services, has launched four innovative e-services during the 35th edition of GITEX Technology Week. The new services address the public and private sectors' needs for advanced electronic solutions that save time and effort in completing official procedures while adhering to the highest standards of quality, accuracy, reliability and transparency. Among ELM services launched at GITEX 2015 is 'Tasreeh' which is of particular importance as an integrated e-service designed to meet the requirements of eligibility management. It enables customers of government agencies and private companies to issue entry permits as per regulations and policies through an advanced web portal. 'Data

Management' Service, on the other hand, primarily focuses on ensuring high quality data in line with the digital transformation. It converts paper data into digital data and generates periodic reports that help in building the strategy more accurately and rapidly, and analyzes performance measurements. As for 'Human Resources,' the Cloud integrated modern techniques service that was created by ELM, it allows for better management of human resource-focused aspect of operation like salaries. Meanwhile, 'Muqem' service was developed for the management of residents and the Wage protection system which required by ministry of labors, which can be accessed via a single gateway from any point online. The service clearly shows the exact costs of development & maintenance avoiding any extra hidden costs to provide the customer with the highest accuracy in terms of budget management and data protection of security concerns and technical issues. Majid Alarifi, Marketing Manager at ELM, noted that the reveal of the upgraded version of "Estihkak" service offers additional benefits, such as access to basic data, management and modification of the terms of maturity, and connection with multiple sources. It has a robust technical infrastructure for data processing, efficiently facilitates the application process, and possesses flexible engine simulation maturities. The KSA's several social services platforms are successfully using Estihkak. 'Estihkak' has been providing more than 3 million electronic transactions per month, through connections of 40 multiple sources of the data-developing a flexible engine for simulations of maturity, which facilitated procedures and the provision of services in accordance with an electronic innovative infrastructure technology for data processing. The upgraded version of 'Estihkak' provides many features such as technical support and system customers' management and objections in addition to the follow-up performance reports. "The new services revealed during the GITEK 2015 are in response to the growing demand and huge potential of integrated e-solutions

within the Saudi market, particularly in terms of IT services which have generated sales of 6.1 billion SR over the current year. Our previous successes have driven us to continue innovating and developing highly advanced e-services." said Majid Alarifi. Majid Alarifi, extended the invitation for those interested in the technology to visit ELM pavilion. He added that ELM's presence at the 35th edition of Gitex 2015 complements the success of last year's participation, which enjoyed remarkable interest from pioneers, decision-makers, senior government officials and private sector companies.

### Saudi mobile subsidiary achieves milestone

Virgin Mobile Saudi Consortium, the Saudi Arabian subsidiary company of Virgin Mobile Middle East & Africa, is now serving over a million customers in Saudi Arabia. The milestone has been achieved in less than one year since the commercial launch of the Mobile Virtual Network Operator (MVNO), making it the mobile telecommunications company with the fastest growth rates across the GCC in 2014 and 2015. Karim Benkirane, Chief Executive Officer Virgin Mobile Saudi Arabia, said: "At Virgin Mobile we are working hard to be right at the front of the customer revolution that is sweeping our industry, and make mobile better. Virgin Mobile is the next generation mobile service that is being built by today's talented young Saudi Arabians, so we are on a great path."

### Ooredoo, Nokia sign five-year mobile broadband framework agreement

Qatar's Ooredoo Group and Nokia Networks have signed a five-year framework agreement to support Ooredoo's long-term development strategy across its footprint in the Middle East, North Africa and Southeast Asia. Under the contract, Nokia will provide advanced mobile broadband technologies and professional services for Ooredoo Group's 2G, 3G, 4G and LTE-A networks. In the renewed agreement, the terms and conditions have been revised to include global best practices in terms of delivery and technology for the benefit of both

companies, a press release says.

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### GCC's Mobile Connected Devices Market Suffers Heaviest Decline on Record

Saudi Telecom Company The GCC's mobile connected devices market suffered its worst ever quarter on decline in Q2 2015, according to newly released research from International Data Corporation (IDC). The global consulting services firm's latest data shows that the market suffered an 8% decline in shipments during the quarter to total just over 8 million units. The GCC mobile connected devices market comprises shipments of smartphones, tablets, and portable PCs to Saudi Arabia, the UAE, Bahrain, Oman, Qatar, and Kuwait. The market's decline was mainly due to the bleak economic situation, geo political uncertainties, inventory pileups, and seasonal shifts in demand. In contrast to the poor performance of the overall market, Oman and Bahrain both experienced healthy quarter-on-quarter growth, spurred by a strong push of smartphone and portable PC shipments by certain vendors. Unfortunately, these markets only account for a combined 9% share of the GCC mobile connected devices space, meaning their positive performances were unable to counterbalance the negative growth seen across the rest of the market. The larger markets of Saudi Arabia and the UAE dominate the GCC mobile connected devices

space with a combined share of more than 75%, but it was these two markets that suffered the region's steepest declines as political and economic concerns, decreased consumer sentiment, and seasonality variables all hit demand. Ongoing political tension in Yemen is proving to be a particular concern as the country borders Saudi Arabia and the current situation poses a threat to the kingdom and the wider region. Falling oil prices are also hampering growth prospects, with governments across the GCC introducing spending cuts. Some GCC countries are considering introducing new tax systems that have the potential to negatively impact the commercial segment and reduce both consumer disposable income and confidence in general. The GCC smartphone market's performance in Q2 2015 was its worst since IDC began tracking the market in 2013, with shipments down 9% on the previous quarter. Four out of the six GCC countries recorded negative growth in Q2 2015, but it was the poor performance of Saudi Arabia and the UAE that drove this decline in shipments. iOS and Android continue to dominate in terms of smartphone operating systems, with a combined 97% market share. "That figure will only increase in the coming quarters with news that more vendors - including BlackBerry and Nokia - will be releasing their own Android devices," says Saad Elkhadem, a research analyst at IDC Middle East, Africa, and Turkey. "The impending release of Windows 10 will have a positive, albeit small, impact on Microsoft's share of the smartphone space. It will take time for both consumers and the channel to gain confidence in the new platform, and Microsoft will be reliant on app developers to provide their backing in order to give it a fighting chance of competing with the app offerings available on iOS and Android. Apps are essential for driving a positive user experience on any given platform." The GCC tablet market bucked the trend in Q2 2015, recording quarter-on-quarter growth of 2% to prevent the overall mobile connected devices market from spiraling to an even worse performance. "Despite the gloomy proclamations surrounding the

region this quarter, we are continuing to track considerable movements in the GCC and remain optimistic about the tablet market's performance," says Feras Ibrahim, a research analyst for personal computing at IDC Middle East, Africa, and Turkey. "We expect to see some noteworthy activity in the tablet market, and this won't be limited to the consumer segment. Kuwait will see the delivery of over 70,000 units to the education sector in Q3 2015, while a significant delivery in the aviation sector has already been announced in Bahrain." Shipments of portable PCs fell 13.2% quarter on quarter in Q2 2015. Consumers are increasingly moving away from portable PCs towards tablets and smartphones, and this trend is inhibiting any type of growth in this space. "There is no question that portable PCs in the GCC are being threatened by other tech products, and shipments will continue to decline throughout the five-year forecast period," says Ibrahim. "More and more end users are adopting tablets, smartphones, and even wearables as their ready-to-go mobile device instead of portable PCs, which is leading to prolonged refreshment cycles and is blocking the growth of portable PCs in the GCC." According to IDC, the significant downturn experienced by the overall market in Q2 2015 is not indicative of a permanent malaise in the GCC. Instead, it shows that the region's markets have become more sensitive to external macro environments. Indeed, IDC forecasts a rebound in the coming quarters as the markets adjust themselves to the economic factors currently hindering their performance. Positive seasonal trends will also come into play, with the UAE's GITEX Shopper event expected to make a significant contribution to shipments of all technology types in Q3 2015. The final quarter of the year is also usually a strong period for mobile connected devices, primarily due to the holiday season but also because many new smartphones are launched in Q3 and start gaining traction in Q4. As such, IDC expects the GCC mobile connected devices market to grow 6% in Q3 2015 and another 4% in Q4 2015. Looking at the year as a whole, IDC forecasts the GCC mobile connected devices market to grow 6% year on year to total 34 million units, followed by further growth of 10% in 2016.

## Mobile operators directly contributed US\$31 billion to Sub-Saharan African economy, representing 1.7 percent of GDP

The mobile industry in Sub-Saharan Africa contributed more than US\$100 billion to the region's economy last year, according to a new GSMA study published at the 'Mobile 360 Series - Africa' conference being held in Cape Town this week. The new study, 'The Mobile Economy - Sub-Saharan Africa 2015', finds that the US\$102 billion economic contribution in 2014 was equivalent to 5.7 per cent of the region's GDP. Mobile operators directly contributed US\$31 billion, representing 1.7 per cent of GDP. This economic contribution is set to increase over the coming years as mobile operators continue to extend connectivity to unconnected populations across the region and roll out new mobile broadband networks and services. The industry is forecast to contribute US\$160 billion in value to the region by 2020, equivalent to 8 per cent of expected GDP by this point. "The mobile industry remains a key driver of economic growth and employment in Sub-Saharan Africa, making a vital contribution given the population growth and high unemployment levels seen in many countries in the region," said Alex Sinclair, Acting Director General and Chief Technology Officer at the GSMA. "Despite revenue and margin pressures, local mobile operators continue to invest heavily to extend network coverage to serve unconnected communities and accelerate the migration to high-speed 3G/4G mobile broadband networks. Mobile technology is also playing a central role in Sub-Saharan Africa by addressing a range of socio-economic challenges, particularly digital and financial inclusion, and enabling access to vital services such as education and healthcare." It is forecast that there will be 386 million unique mobile subscribers in Sub-Saharan Africa by the end of this year, equivalent to 41 per cent of the region's population. The region's subscriber base has grown by 13 per cent a year (CAGR), on average, during the first half of this decade (2010 to 2015), growing at more than twice the rate of the global average (6 per cent) during this period. The region

overtook Latin America in 2014 to become the world's third-largest mobile subscriber market, behind only Asia Pacific and Europe. The number of unique mobile subscribers in Sub-Saharan Africa is forecast to surpass half a billion (518 million) by 2020, representing almost one in two (49 per cent) of the region's population by this point. Total mobile connections<sup>2</sup> in Sub-Saharan Africa are on track to reach 722 million by year-end. Mobile broadband (3G/4G) will account for almost a quarter of connections this year, but will increase to 57 per cent by 2020, driven by expanding mobile broadband network coverage and falling device costs. Commercial 3G networks have been launched in 41 countries across Sub-Saharan Africa as of June 2015, while 4G networks have been launched in 23 countries. Investment in these high-speed networks is resulting in a corresponding growth in consumers using their devices to access the internet; almost a quarter (23 per cent) of the Sub-Saharan African population will be using the mobile internet this year, a figure forecast to rise to 37 per cent by 2020. Mobile is seen as the primary means of accessing the internet in a region where fixed-line infrastructure is severely limited. The increasing availability of mobile broadband networks, alongside the introduction of affordable mobile data tariffs and falling device prices, has led to a surge in smartphone use. The smartphone adoption rate has doubled over the last two years and now accounts for one in five connections, though this is still half the global adoption average (40 per cent). It is predicted that regional smartphone connections<sup>3</sup> will reach 540 million by 2020, accounting for half of total connections by that point. The report notes that the average selling price (ASP) of smartphones has fallen significantly in most regional markets, with an increasing number of models now available in the sub-US\$100 price range. In 2014, the mobile ecosystem directly employed approximately 2 million people in Sub-Saharan Africa, with the majority working in the distribution and retail sectors and approximately 325,000 employed by mobile operators. A further 2.4 million jobs were

indirectly supported as result of the demand generated by the mobile sector, bringing the total to 4.4 million. It is forecast that the industry will grow to support more than 6 million jobs by 2020. The mobile ecosystem also made a contribution to the public finances of the region's governments via general taxation of approximately US\$15 billion in 2014. Mobile operators in the region invested US\$9 billion in network infrastructure development in 2014, a 16 per cent increase on the amount invested in 2013. The ongoing investment in mobile broadband networks will see capital investments reach US\$13.6 billion by 2020. The report highlights how mobile operators are working on innovative solutions to expand network coverage to underserved populations in rural and geographically remote areas, and to tackle the barriers to mobile phone adoption, including affordability and digital literacy. It also indicates that mobile operators, governments and international development organisations have been working on a range of mobile-based solutions to address a variety of social challenges in the region, many of which arise from lack of access to essential services, such as basic education and health. "Mobile is having a hugely positive and transformative impact across Sub-Saharan Africa, but future progress will depend on governments working with the industry to provide a regulatory environment that encourages investment and innovation," added Alex Sinclair.

## UAE telecom infrastructure ready to handle data and emergencies

Etisalat, the Abu Dhabi-based telecommunications provider, announced the launch of nine data centers across the UAE in order to boost its services to consumers. The centers aim to provide back-up and additional infrastructure in case of natural disasters such as earthquakes and fires. During a Gulf News visit to a data centre in Khalifa City, Abdullah Al Ahmad, etisalat's vice-president of Business Services, said that the company has seen a global need to boost data security. "There are about 15 billion devices globally connected to the internet, with data worth 13 trillion gigabytes in 2015 and around 500 million transactions done on a daily basis. The number of mobile

phones has also doubled over the past four years, replacing desktops and other portable devices," Al Ahmad said. He added that such an abundance of data has shed light on the importance of telecommunication providers raising security in order to offer backup in case of emergencies. "The data centre in Khalifa City offers servers, additional storage of data, cooling systems, and a wider network to distribute energy. This means that we have more infrastructure to service more individuals, companies, government organizations, and banks," Al Ahmad said. He noted that etisalat has laid out an investment plan worth Dh25 million between 2010 and 2015 to raise its coverage. The company's nine data centers are located in Abu Dhabi, Al Ain, Dubai, and Fujairah, and can store over 400 gigabytes of data across the centers' total area of 16,000 square meters. "It has become clear that there is an urgent need to handle data, especially with the Internet of Things, and Big Data. The data centre in Khalifa City currently services the education, banking, and aviation sectors primarily," Al Ahmad said.

## LTE performance: Oman ranked 28th, only behind UAE among GCC states

Oman's telecommunication industry continues to perform robustly with the sultanate being ranked 28th in the world in LTE performance, leaving behind the UK, Japan, Germany and the US. Oman is ahead of all GCC countries except UAE. The average download speed on Oman's 4G networks inched up to 15Mbps in the June-August quarter, according to research company OpenSignal's global report, 'The State of LTE' released earlier this month. New Zealand scored the highest average speed in the quarter with 36Mbps, coming up from nowhere in the rankings. But perennial standouts like South Korea and Singapore kept getting faster, too. The average LTE speed in Korea is now 29Mbps (up by 4Mbps), and in Singapore it's 33Mbps, up by 5Mbps. UAE ranked eighth, Bahrain 37th, Qatar 58th, Kuwait 63rd and Saudi Arabia 65th. However, in case of LTE coverage, Oman is ranked 43rd (with 55 per cent coverage) overall and is behind all other GCC states. Kuwait leads the group at the fourth spot, followed by Bahrain at ninth, Qatar at 13th, UAE (17th) and Saudi Arabia at the 30th position. The biggest standout

is South Korea, where users enjoy LTE service 97 per cent of the time. On carrier LG U+, it's 99.6 percent, so effectively subscribers never have to fall back onto 3G. Korea is also home to the fastest single LTE operator in the world, Olleh, with an average download speed of 30Mbps. In another report conducted by global analyst firm Ovum, 4G LTE-enabled devices will account for four out of five mobile subscriptions in Oman by 2020. The number of LTE mobile subscriptions in Oman will exceed GSM (2G) subscriptions in the country by the end of 2015 and overtake W-CDMA (3G) subscriptions during 2018, growing to account for 80.6 per cent of Oman's mobile subscriptions by the end of 2020, forecasts Ovum. The number of GSM connections in Oman will decline steeply over the forecast period, with the result that W-CDMA and LTE connections combined will make up 99.5 per cent of mobile subscriptions in the country by end of 2020. Matthew Reed, practice leader for Middle East and Africa at Ovum, said, "Oman is among the more advanced telecom markets in the Middle East, and the continued roll-out of LTE networks by the two main operators, along with factors such as increasing affordability of LTE-enabled devices, will lead to a rapid rise in the use of LTE technology over the coming five years."

## Healthcare providers in Middle East and North Africa to spend US \$2.73 billion on IT in 2015

Healthcare providers in the Middle East and North Africa will spend US \$2.73 billion on IT products and services in 2015, according to Gartner, Inc. This forecast includes spending by healthcare providers (which includes hospitals and physicians' practices) on internal services, software, IT services, data center, devices and telecom services. Telecom services, which include fixed and mobile telecom services, will remain the largest overall spending category throughout the forecast period within the healthcare providers sector with an expected market

size of US \$1 billion in 2015. IT services spending is estimated to reach US \$361 million in 2015. Consulting, with an estimated market size of US \$93 million in 2015, and implementation, with an estimated market size of US \$96 million in 2015, will be two of largest sub-segment within IT services in 2015. Software spending will increase 4.9 percent over last year to reach US \$394 million in 2015. Internal services will grow 5 percent in 2015 to be a US \$497 million market in 2015. Internal services refer to salaries and benefits paid to the information services staff of an organization. The information services staff includes all company employees that plan, develop, implement and maintain information systems. "The private sector in the Middle East and North Africa is ramping investments in building hospitals, clinics, and by forming partnership with international centers of excellence from the U.S. and Europe. Chronic disease management is a major priority in the area," said Anurag Gupta, research vice president at Gartner. "This demand of healthcare within the local population, and growth in building local credentials to attract medical tourists is deriving corresponding investments in ICT." Further information on healthcare providers sector IT spending is available in the Gartner report: Forecast: Enterprise IT spending for the Healthcare Providers Market, Worldwide, 2013-2019, 2Q15 Update. The forecasts provides total enterprise IT spending, including internal spending and multiple lines of detail for spending on hardware, software, IT services, and telecommunications for vertical industries and 43 countries within seven geographies.

## Huawei witnesses exponential growth in ME

Chinese electronics giant Huawei and the world's third-biggest smartphone manufacturer say that the Middle East market remains their stronghold as it witnesses exponential growth in the smartphone segment. At the same time Sandeep Saihgale, Middle East Vice president of Huawei Consumer Business Group said that the company continues to break new ground in the wearables space, especially with the unveiling of the Huawei Watch, powered by Android Wear(tm) and IOS. Huawei unveiled the flagship Power of Touch "Mate S" Smartphone and the Huawei Watch W1 at the regional

launch in Dubai. Last year alone, Huawei targeted global smartphone shipments of 60 million units and expect this number to increase further. "The Middle East is a very strategic market for our business. We strive to grow and offer our customers products that impact and enrich their lives. In designing the Huawei Mate S, we wanted to develop a smartphone that offers a personalized experience with the power of touch; we once again took a revolutionary approach and re-imagined how people interact with their devices, adding innovative features that enhance ease of use, functionality and creativity," said Sandeep. With the launch of the Huawei Watch, we have created a bespoke timepiece that expresses consumers varied preferences in technology, fashion and lifestyles, whilst maintaining technological innovation, added Sandeep. Touch is a core of the Huawei Mate S, creating a new experience for users that enhances their interaction with the device. When viewing photos, they can be quickly previewed and enlarged by pressing the screen with one finger, streamlining the operations of a traditional phone.

## Airtel, Axiata Bangladesh apply for merger permission

Bangladeshi cellcos Robi Axiata and Airtel Bangladesh, owned by Malaysia's Axiata and India's Bharti Airtel respectively, have applied to the local telecoms regulator for permission to merge their operations, it has been revealed in an update to the previously announced negotiations between the two rivals. The Daily Star, quoting senior executives of Robi and Airtel, wrote that the pair hope to complete a merger deal by January 2016 to leapfrog Vimpelcom's subsidiary Banglalink as Bangladesh's second-largest mobile provider behind Telenor's GrameenPhone unit. The Bangladesh Telecommunication Regulatory Commission (BTRC) confirmed that it has received a joint application, whilst noting that the merger will require separate government approval on top of the regulator's recommendation. According to the merger plan, Axiata would take a 70% stake in the enlarged cellco, with Bharti Airtel holding 25% and a 5% stake retained by Japan's NTT DOCOMO, which is an existing minority shareholder in Robi



## REGULATORY NEWS

### REGULATORY UPDATES

#### Reduced growth rate in Pakistan telecom sector an incentive for policy review

Almost all key indicators – from revenues to foreign direct investment (FDI), imports and contribution to the national exchequer – showed reduced growth, statistics from Pakistan Telecommunication Authority have revealed. The sector's overall revenue clocked in at Rs449.5 billion in the year ended June 30, 2015, down 3% compared to Rs463.5 billion of the previous fiscal year. A breakdown indicates the sales of cellular mobile operators, which account for more than two-thirds of the sector's overall revenue, declined 1.8% to Rs317 billion during the year under review compared to Rs323 billion of the corresponding year. It may be added that the operators' overall user base decreased by more than 25 million or 18% to 114.7 million in FY2015, compared to the peak of almost 140 million in June 30, 2014, courtesy the biometric verification drive. The total FDI in the sector amounted to \$121 million during FY15, down 72% compared to \$430 million of the corresponding year. The telecom sector's contribution to the national economy – in the form of sales tax, excise duty and customs duty – also declined by almost 50%. The sector paid Rs126 billion in taxes to the government during FY15 compared to Rs243 billion of the previous year. A breakdown of tax data shows

general sales tax (GST) collection declined by almost a quarter to Rs46 billion in the review period compared to Rs60 billion in FY14. Other taxes, which include customs duty, withholding tax and other levies declined by 6.4% to Rs73.5 billion in FY15 compared to Rs78.6 billion of the last fiscal year.

#### Europe votes on roaming charges, net neutrality

The European Parliament backed the EU telecoms reform package, including key measures that will see an end to roaming charges and guarantee net neutrality – although the proposal was never under serious threat. The result was unlikely to deliver any serious surprises, since the text in question was agreed between the parliament, European Commission and the Council of Ministers in June. However, Pilar del Castillo Vera, the bill's main parliamentary backer, was heckled during her victory speech and amendments were proposed (but rejected). Supporters of tighter net neutrality failed to muster enough votes to cause an upset. In a speech ahead of the vote, European Commission Vice-President Andrus Ansip hailed the compromise behind the vote: "Adopting the rules for a Telecoms Single Market will be a major achievement for the Digital Single Market. It will show Europeans that the Union can deliver

tangible results. You now have the deal in your hands. It is a good deal, for Europe and Europeans." The agreement between the three bodies will see an end to roaming charges from June next year as well introducing net neutrality for the first time in EU law. The latter rules will come into effect from 30 April, 2016. However, it followed some fraught negotiation. Anspij himself appeared in despair at times. Back in March this year, he described the chance of reaching a compromise agreement as "an uphill struggle". However, presumably today he is adopting a lighter tone.

## Qualcomm, Ericsson and ZTE weigh in on calls for more US spectrum

US spectrum access remains the biggest challenge facing the country's mobile market and needs to be addressed to support the growing requirements in the country, leading vendors warned. Representatives from Qualcomm, Ericsson and ZTE echoed each other in drawing on a lack of available spectrum to meet the growing demand for data services in the country, which Ericsson's North America CTO and head of strategy Glenn Laxdal said is growing "at a rate of more than 50 per cent, while revenue for operators grows comparatively in the single digits". He said that while next year's US incentive auction will help, "even though its not a large amount", the recent AWS-3 spectrum, which raised approximately \$45 billion, showed "just how valuable spectrum is". Laxdal said the country now needs to look "towards a 2020 timeframe, in particular for 5G, when the industry will need access to large blocks of spectrum in 100GHz blocks". Counterpart Matt Grob, EVP and CTO at Qualcomm, conformed, stating that "fair and reasonable access to spectrum remained the biggest challenge in the US to deploy networks where they are needed", while ZTE's Sean Cai, VP CTO team, said the problem lies in regulating the amount of spectrum available, which could present even bigger challenges once 5G comes around. "With 4G, you see pockets of spectrum being used, but you need deep coverage to fulfill what 5G is intended to do, even in rural parts of the country, and that will be the biggest challenge." Cai believes that as well as providing more spectrum, the country's operators need to look

at ways to use the spectrum that is available more effectively. "A way to address the challenge is to combine spectrum, as well as spectrum sharing, particularly in rural parts of the country. This could be part of the solution, even if operators don't like it. In the future, it is inevitable that spectrum is limited.

## India's telecom industry may see a 3-way merger

Indian operators Reliance Communications (RCom), Aircel and Sistema are reportedly negotiating a three-way merger that could bring some sorely-needed consolidation to the nation's crowded mobile market. The companies have commenced initial talks over an arrangement that could create the nation's third largest mobile operator by subscribers, the Economic Times reported, citing unnamed sources. Under the proposal Sistema's Indian mobile brand MTS could merge into RCom via a share-swap deal. The combined company would then enter a pact to tie up with Aircel. According to the report, the second stage of the proposed deal would require both RCom and Aircel to reduce their debt levels via asset sales. But RCom would reportedly prefer to enter a deal with Aircel involving trading and sharing airwaves rather than a merger. If a merger deal does go through the sources say Maxis will end up being the largest shareholder in the combined company with a 35-40% stake, RCom's majority owner Anil Ambani having less than 30%, Sistema having less than 10% and the remainder going to RCom's other shareholders. Aircel is owned by Malaysia's Maxis, while Sistema the parent company is from Russia

## Etisalat CEO hails UAE's regulatory stance

Ahmad Abdulkarim Julfar, head of Etisalat Group, highlighted the UAE's approach to telecoms regulation as a model that will support mobile growth across the Arab world. Speaking in the opening keynote session here in Dubai, Julfar (pictured above) hailed the UAE as "one of the most successful telecoms markets in the region", especially with regards to spectrum. "We have more spectrum available in the UAE than any of the other markets where we operate," he

noted. "We have a good economy and good regulation [in the UAE]." Julfar was preceded on stage by H.E. Hamad Al Mansoori, the Director General of the UAE's Telecoms Regulatory Authority (TRA), who had set out the local government's strategy for supporting digital growth. He talked of the government and the private sector working together to achieve "common goals" and responding quickly to rapid technological change. This was a theme continued by Julfar: "Even in UAE, we are just scratching the surface [of the digital revolution]. Governments need to adapt... and embrace change. It's like a high speed train bypassing your station – do you get on or do you get left behind? Regulators in many countries are not yet geared up to support the future." Julfar noted that Etisalat was active in 19 "very different" markets across the Middle East and North Africa, as well as being the market leader in the UAE. He described Etisalat as "a digital enablement platform" and an "enabler of social and economic growth."

## Tata Teleservices takes first step to trade 800MHz spectrum

India's Tata Teleservices is looking to liberalise its CDMA spectrum in at least four regions as it prepares to trade the spectrum, likely with Telenor India, as it needs to offer 4G services to keep up with the country's major players which have announced 4G rollout plans. Under the country's new spectrum trading rules, which the cabinet approved last month, an operator is required to "liberalise" spectrum that wasn't acquired in an auction by paying the market, or auction-determined, price before it can trade the airwaves. Tata Teleservices, which is the country's seventh largest operator with a 6 per cent share, has advised the Department of Telecom its intention to liberalise its 800MHz spectrum in Delhi and Andhra Pradesh, and plans to do the same for Mumbai and Maharashtra, the Economic Times reported. It also may consider freeing up the spectrum in Haryana at a later time. The operator's 800MHz spectrum in the four regions has attracted interest from rivals because they are among the country's highest revenue service areas, the Times said. Tata Tele had been linked to Telenor India, which operates 2G service in only

six regions and is understood to be looking to expand nationwide. But the Telenor unit balked at the valuation of Tata Tele, which has more than INR250 billion (\$3.8 billion) in debt. The new spectrum trading rules would enable Telenor to expand by just purchasing the 800MHz spectrum to roll out 4G services. Tata Tele plans to introduce 4G services as well, but first needs to liberalise its spectrum, the Times said. Reliance Communications and 4G upstart Reliance Jio Infocomm were the first operators in India to take advantage of new regulations allowing spectrum sharing, with plans to share the 800MHz band in 10 service areas.

## European telco CEOs speak up for consolidation, regulatory reform

Operators say they need to be able to merge to build scale as demands on the network grow. Upgraded copper, mobile and cable are all now used for delivering high-speed Internet access. "Commercial terms for network access should be the rule; regulation should be the exception," they said. They also spoke up for spectrum reform, demanding "a truly European approach to spectrum allocation." "We support a political agreement between the European Commission and governments on how to ensure harmonized spectrum management across the EU," they said. Finally, the telcos also addressed the issue of net neutrality, highlighting the importance of network quality and diversification of services as new markets emerged, such as connected cars, e-health and online content distribution. "All of this requires network management as well as differentiation of services," the operators said. "This awareness should drive implementation and any future policy debate on the topic.

## Operators' need for the right regulatory regime that supports fair competition for investment reinforced in UK

BT has responded to Ofcom's Digital Communications Review, setting out how regulation can help Britain

secure its digital future and maintain its position as the leading digital economy in the G20 Boston Consulting Group. UK eGDP 2010-2018: Summary of forecasts. May 2015. Central to BT's vision is further large scale investment – building on the £20bn it has invested in networks over the last decade – as well as an enhanced focus on service to meet massively increasing customer demand for communications. BT says it is vital for the digital health of the UK that Openreach remains part of the wider BT Group as this will enable it to continue to benefit from BT's capital as well as the c.£500m a year BT spends on its world class research and development. BT is keen that Openreach continues to provide regulated services to all companies on an equal basis as this model has served the UK exceptionally well over the past decade, and the company believes others have failed to make a convincing and evidence based case for change. In its submission, BT cites independent data that shows the UK currently leads the EU 'big five' for superfast broadband coverage, take up and competition. Prices are also among the lowest in Europe Ofcom, European Broadband Scorecard Q1 2015. The company also sets out how the average UK broadband speed has risen from just 1Mbps in 2005 to more than 22Mbps currently, and how around 24 million households and businesses are using the service across all networks, around three times the eight million who used broadband a decade ago. Demand is growing with customers increasingly reliant on the internet and demanding higher levels of service. BT outlined plans on 22 September to meet this surge in demand now and in the future, and today's submission sets out the regulatory changes that would help UK consumers and businesses enjoy the best possible outcomes. These include:

- Long term commitments from Ofcom to provide certainty and clarity
- Regulatory policies to encourage large scale investment
- Support for consolidation when it benefits competition and brings investment
- A better regulatory balance between service quality and price
- A level playing field particularly with regard to Pay TV

- Simplification of current regulations with duplication removed where possible

As well as setting out how the broadband market has flourished – in part thanks to the creation of Openreach – BT's submission highlights the continuing problems in the Pay TV market, where Sky's dominance continues to be unchecked and where new rules are needed to make switching far easier for customers. The competition issues in this market have long been recognized but regulation has been 'lop sided' to date with Sky having easy and highly regulated access to the Openreach network – which has enabled it to secure millions of UK broadband customers – whereas BT has struggled to obtain similar wholesale deals with Sky when it comes to content. BT Group chief executive Gavin Patterson said, "We are now at a critical point in the development of the UK as a digital nation. Broadband has become central to our economic and social life today and the industry must therefore invest to meet this growth in customer expectations and demand. "BT is driving the transformation of Britain's digital infrastructure but we need the right regulatory regime that supports fair competition for all and large scale investment. With this in place, there is no doubt that we can meet the challenges of the next decade, fulfilling the needs of consumers and businesses, driving the growth of the UK economy and supporting social progress for the whole country. "Ofcom has the opportunity to level the playing field by tackling Sky's dominance of Pay TV. That dominance has led to poor outcomes for UK consumers and it is about time that converged regulation was introduced to deal with a converged market. The current lop sided approach isn't serving customers well."

## MTN chief pushes need for "predictable" regulation

Sifiso Dabengwa, CEO of African operator group MTN, said that while the idea of providing universal access to telecoms services is "a great objective", this has to be accompanied by regulatory moves "to make sure that can actually happen". "I think that in our region, across our continent, the relationship between operators,

regulators and policy makers has probably not been optimal. In nearly every market there is a policy drive to get universal internet access, but then the availability of spectrum is probably the biggest issue," he said. Dabengwa was confident in his belief that operators are prepared to invest heavily, but that this is a long-term effort which needs to be accompanied by "clear regulation that is predictable". "It's going to be quite expensive, a lot of capital expenditure has to be made, but I think that if you look at it in the longer term, it's a worthwhile investment. I don't believe that from an operator point of view there are a lot of issues, the big issue is that we need a predictable environment, knowing that we will not be limited in terms of growth from a spectrum point of view." The MTN CEO pointed to the strong growth of basic voice services in Africa, where "the costs of getting into the business from a regulatory point of view were very reasonable. There weren't extensive up-front costs". "All we are asking is that the same regulatory framework that we saw in the basic voice service has to be applied in the more data-intensive environment. But the key issue is that we have to have the spectrum available, and it has to be available much ahead of time, so that we can always meet the demand as it grows," he added. Dabengwa also said that consolidation may be required in some markets in order to enable the necessary levels of investment in infrastructure. "I think if one averages out most markets on the continent, probably the population is between 30 million and 60 million. If you have four or five operators that are trying to compete, and invest, and be profitable, I think that's quite difficult," he said. "In data-intensive markets, we have to consider consolidation, to the extent that there is still competition, but also so the markets and the business are sustainable."

## OFCOM chief warns on BT/EE, 3 UK/O2 mergers

Sharon White, chief executive of UK regulator Ofcom, gave a further sign of bearishness among regulators in Europe towards consolidation in the mobile industry. Fixed incumbent BT is in the process of acquiring leading operator EE, while 3 UK and O2 might also tie up, radically reshaping the UK's telecoms market. Yet White

(pictured) questioned the underlying argument behind such deals. She claimed even while UK operators are investing billions in rolling out 4G, they are maintaining a healthy average cashflow margin in excess of 12 per cent. "We continue to believe that four operators is a competitive number that has delivered good results for consumers and sustainable returns for companies," commented White in a speech at the London School of Economics & Political Science. Even though Ofcom will not rule directly on either UK merger, her comments reflect thinking among regulators. "I am concerned that the UK could end up with more concentrated markets that lead to higher prices and reduced choice for consumers, without the promised boost to investment and innovation," said White. The UK regulator provided evidence to the Competition and Markets Authority (CMA) and the European Commission for both deals but does not have a final veto on either. She echoed comments last week by EU Competition Commissioner Margrethe Vestager, pointing to research suggesting that a reduction in the number of players from four-to-three in a national mobile market in the EU can lead to higher prices for consumers, but not more investment per subscriber. Meanwhile Vodafone has used a submission to Ofcom to call for BT's local-networks business, Openreach, to be split off entirely from its parent. BT's role as a wholesale supplier of broadband services has come under greater scrutiny since its bid for EE. According to the Financial Times, Vodafone argued that BT generated £6.5 billion in "excessive profits" in the past decade from its Openreach unit overcharging broadband rivals. The operator made its submission as part of Ofcom's general review into regulation of the telecoms sector (as opposed to specifically the BT-EE deal). Consultation closed today (8 October). Separately, fixed operator Cityfibre yesterday announced it would be supplying connectivity to Vodafone. There has been concern expressed by some operators at BT's role as a leading backhaul provider for the mobile industry since its bid for EE. But Vodafone denied to Mobile World Live any link to BT's EE bid. "We have always worked with a mix of different suppliers, usually there are no announcements about these agreements. However with CityFibre being AIM listed they felt that the first contract under the existing MSA

(master services agreement) warranted a stock market announcement.

## BT says retaining Openreach 'vital' for UK digital economy

BT became the latest U.K. telecoms operator to respond to Ofcom's market review, reiterating its determination to retain control of its Openreach access arm and its desire for a level playing field in the pay TV sector. The U.K. incumbent once again highlighted the investments it has made in its infrastructure, putting the sum at £20 billion over the last 10 years and pledging to continue spending provided it has the backing of a supportive regulator. "It is vital for the digital health of the U.K. that Openreach remains part of the wider BT Group as this will enable it to continue to benefit from BT's capital as well as the c.£500 million a year BT spends on its world class research and development," the telco said, in a statement. "BT is keen that Openreach continues to provide regulated services to all companies on an equal basis as this model has served the U.K. exceptionally well over the past decade, and the company believes others have failed to make a convincing and evidence based case for change," it added. Its comments come after Vodafone on Thursday aligned itself with the structural separation camp, sharing its belief that this is the only way to stimulate investment in the market, referring in particular to fiber network rollouts. In its submission to the regulator, BT insisted that the U.K. has a flourishing broadband market, in part thanks to the creation of Openreach a decade ago. It also renewed calls for Ofcom to address Sky's dominance of the pay TV market. Sky has "easy and highly regulated access to the Openreach network – which has enabled it to secure millions of U.K. broadband customers – whereas BT has struggled to obtain similar wholesale deals with Sky when it comes to content," BT said. The telco has built up a pay TV customer base of 1.2 million and has spent heavily to secure rights to premium sports content, including English Premier League football. "BT is driving the transformation of Britain's digital infrastructure but we need the right regulatory regime that supports fair competition for all and

large scale investment," said BT chief executive Gavin Patterson. "Ofcom has the opportunity to level the playing field by tackling Sky's dominance of pay TV," he added. "That dominance has led to poor outcomes for U.K. consumers and it is about time that converged regulation was introduced to deal with a converged market.

## Regulators urged to give IoT industry sub-1GHz spectrum

Regulators need to devote sub-1GHz spectrum to the Internet of Things to ensure the long-term health of the sector, the Wireless IoT Forum has urged. The industry body said the likes of Ofcom in the UK and the FCC in the US need to do more to solve issues such as fragmentation and interference. It said the latter is a problem because of the volume of applications using current bands. Further difficulties are caused by how IoT traffic has to go through a limited number of base stations and are subject to the same regulatory constraints as other devices using unlicensed spectrum. In order to power networks that comprise more than 1,000 devices per cell, the IoT Forum said these cells need to have enough power to have a range of up to five kilometers, have a balanced uplink and downlink ratio, be interference free and operate on a band that is available worldwide. William Webb, WIoTF CEO, said: "It is clear the IoT is a key technology to boost productivity, alleviate key societal challenges, and improve our working lives and to deliver growth and employment. "For these reasons it merits a higher level of regulatory attention than many other wireless applications. We would like to see regulators dedicate bands in the range 800MHz-1000MHz to IoT applications, thus overcoming interference issues. "Where IoT is deployed in general purpose unlicensed bands we would like to see "light licensing" approaches for base stations removing duty cycle restrictions and enabling higher power levels." Webb's Weightless SIG has been working on its own narrowband IoT technology. Nwave recently deployed an IoT network in Copenhagen using tech built on the Weightless-N standard.

## Telecoms regulations should not "create burdens" for businesses looking to invest in the next generation of digital communications infrastructure, the UK government

The Department for Culture, Media and Sport (DCMS) issued the warning in a document that sets out the UK government's views and priorities for reforms to the EU electronic communications regulatory framework. DCMS said the electronic communications market has seen "significant changes" since the last time the regulatory framework for the market was opened up for review in 2007, including an increase in consumers' expectations of electronic communication services, and the increase in use in, and advancement of, mobile technologies. "Users are now increasingly seeing connectivity as a right, rather than a privilege," DCMS said. "They commonly expect to have the freedom to be connected and to access services and applications, wherever they are and whenever they want, at all times. The willingness of consumers to pay for communications services may not necessarily rise with their expectations and so this is a real investment challenge to industry." "This challenge is intensified by the costs associated with developing new technologies; the emergence of new, non-traditional players delivering electronic communication services; and changes in market structures across Europe. Within this context, the regulatory framework needs to support industry to make the necessary investments in our digital communications infrastructure, rather than create burdens on public finances or on the businesses investing in infrastructure. Deregulation should therefore be the starting point for this review," it said. The UK government wants to see EU a regulatory framework for electronic communications that "supports investment and innovation, and accommodates changes in technology and market structure" and which recognizes that competition is "the most effective way to deliver the desired outcomes", DCMS said. The framework must also aid the

"deployment of communication networks that meet the needs of users over the next decade" and provide for "an acceptable level of connectivity" for every person, it said. The regulatory regime should also be one which "empowers and protects consumers through greater transparency and awareness of services and safeguards consumer privacy and use of their data", and provide EU countries with freedom to "place appropriate obligations on service providers" for national security reasons, it said. DCMS said the European Commission should look to avoid increasing the regulation facing 'over the top' (OTT) communication providers, echoing views expressed by UK culture minister Ed Vaizey last month. Instead, the Commission should focus efforts on reducing the regulatory burdens for traditional telecoms operators facing competition from the OTT providers, where possible, it said. "Changes in technology will create winners and losers, but new regulation should not be used to shield companies from the competition of legitimate, more popular alternatives and the Commission should use the existing competition framework effectively where there is evidence of market abuse," DCMS said. "The Commission should also make the distinction between regulation of infrastructure networks and the regulation of communication services, reflecting that OTT service providers have no control over the infrastructure upon which they rely." "Creating a transparent and competitive market should not automatically mean extending regulation to all over the top services... It should be possible to explore a deregulatory approach where this does not harm consumer interests or hinder member states' ability to protect public security by placing obligations on services. Where users now consider OTT services to be close substitutes for traditional electronic communication services, deregulation of those traditional services could reduce the financial and regulatory burden on the telecoms industry at a time where the Commission and member states are looking for significant levels of investment in infrastructure and services," it said. DCMS also said that reforms to EU data protection rules currently in the pipeline could afford EU law makers the chance to streamline EU e-privacy rules. The



Commission has previously said it will look to update the existing Privacy and Electronic Communications Directive once the new General Data Protection Regulation has been finalized. "A mandatory approach risks unanticipated impacts on member states that result in excessive costs and will have implications for industry as well – member states will seldom be in identical positions, meaning a need in some cases for costly remediation of services. Furthermore, some of these differences arise from the physics of radio transmission in the different geographies of different member states: the presence of hills, mountains, trees and rain all impact on radio transmissions at some frequencies," it said.

## CMA asks EC to allow it to review O2 UK/Three UK merger

Britain's Competition and Markets Authority (CMA) has made a request to the European Commission (EC) to allow it to review the proposed acquisition of Telefonica Europe, owner of O2 UK, by Three UK Hong Kong-based parent company CK Hutchison Holdings. As previously reported by TeleGeography's CommsUpdate, following the confirmation earlier this month that CK Hutchison had filed an application seeking approval of its bid for O2 UK to the EC, the CMA revealed that it was seeking views on the proposed tie-up to determine whether it might substantially lessen competition in the country's mobile sector. Now, the CMA has confirmed that its initial view, following this consultation and preliminary analysis, is that the transaction 'threatens to affect significantly competition in

the UK retail mobile and wholesale mobile markets'. As such, it has said it believes it is appropriate for the case to be referred to it for investigation because any impact on competition resulting from the merger will likely be limited to UK consumers. It also cited its experience in investigating mergers as another reason that it should be allowed to tackle the case, saying in particular

that its ongoing investigation into the proposed merger of fixed line incumbent BT and cellco EE meant that there were 'clear links between these two cases' which meant it would be 'more efficient' for it to examine the O2 UK/Three merger, while also ensuring it avoids 'duplication and fragmentation'. A decision by the EC on whether or not to refer the case to the CMA must be made by 30 October 2015.

## India government notifies spectrum sharing guidelines

The department of telecommunications (DoT) on Thursday notified the spectrum sharing rules that were approved by the Cabinet on August 12 and will allow sharing of all spectrum available at present, and new bands which will be allocated in future. The guidelines issued by the government allow telecom companies to share even traded spectrum, where telecom companies can sell the right to use spectrum to other company and later share the same spectrum. "All access spectrum, including traded spectrum, shall be sharable provided both licensees are having spectrum in the same band," the guidelines issued by DoT said. The guidelines will not only help in effective use of airwaves, but will also reduce call drops and cost of operations of telcos besides improving quality of calls. The spectrum sharing is allowed only among two telecom operators in the same frequency band within the same telecom circle. The guidelines have clarified that in the case of telecom companies operators holding administratively allocated

spectrum want to share their spectrum, then they will need to pay one-time spectrum charge demanded by DoT. "If the said amount is not paid due to judicial intervention at judicial forums barring any coercive action, in the interim, sharing of spectrum in such cases will also be permitted subject to submission of a bank guarantee for an amount equal to the demand raised... pending final outcome of the court case," the guidelines said.

## Arcep authorizes Orange to trial '5G' in France

France's Regulatory Authority for Electronic Communications and Posts (Autorite de Regulation des Communications Electroniques et des Postes, Arcep) has issued domestic cellco Orange France with authorization to conduct trials of '5G technologies' in the city of Belford until the end of 2016, as part of Europe's 5G Infrastructure Public Private Partnership (5G-PPP) program. The project will examine 'the conditions of use for millimeter-wave frequency bands between 6GHz and 100GHz for 5G', which represent a key component in achieving the performance objectives being set for 5G technologies. Arcep authorized Orange to perform trials in the following bands: 3600MHz-3800MHz, 10500MHz-10625MHz and 17300MHz-17425MHz.



## ▼ A SNAPSHOT OF REGULATORY ACTIVITIES IN SAMENA REGION

### REGULATORY UPDATES

#### Algeria



**President: Mr. Toufik Bessai**  
[Regulatory Authority for Post & Telecommunication (ARPT)]

Algeria's new Minister of Post, IT and Communications, Iman Houda Feraoun, has revealed that there are no current plans to open up the capital of state-owned telecoms operator Algerie Telecom (AT) to the public, as it is viewed as 'a strategic holding of the state'. The official, however, pointed out that the listing of a 20% stake of AT's wireless arm Mobilis on the Algiers Stock Exchange is still on the cards. Under the plan, which is currently being under review, Mobilis would be spun off in a separate company before the initial public offering (IPO) takes place. In October 2013 it emerged that the Council of State Holdings (Conseil des participations de l'Etat, CPE), the agency managing the Algerian government's stake in business entities, was reportedly planning to sell the shares of ten nationalized companies, including Mobilis, to the public. The government wanted to give a strong signal in favor of boosting the stock market and the creation of a market capital by the IPO of a total of 40 state-owned companies by the end of 2015. (October 7, 2015) Agence Ecofin

#### Bahrain



**Chairman: Dr. Mohammed Al Amer**  
[Telecommunication Regulatory Authority (TRA)]

Telecommunications Regulatory Authority (TRA) says that it is in receipt of a substantial amount of complaints over the degradation of VOIP applications by the three public licensed mobile operators. As a result, the regulator says that it has issued an Emergency Order to the three mobile operators. Following its investigation into the matter, the TRA said that it believes that the mobile operators have effectively changed the terms and conditions of their service without the written approval of the regulator which is in turn a breach of their license conditions. The Authority's General Director Mohamed Bubashait stated "In line with the Authority's role and responsibility in protecting consumers in the Kingdom of Bahrain, the Authority will be taking appropriate action to ensure that the operators comply with the terms and conditions of their license and obtain the Authority's approval before embarking on any change." (October 26, 2015) cellular-news.com

Telecommunications Regulatory Authority (TRA) has circulated on its website a public consultation entitled "Regulation on

Roaming on Public Mobile Communications Networks". The consultation introduces a significantly revamped International Roaming Regulation; the aim of which is to provide enhanced consumer protection safeguards notably by increasing tariff transparency insofar as this relates to international roaming. Significantly international data roaming is now also within the scope of the regulation and more importantly for consumers, an automatic cut off limit is being proposed that would see data roaming services being switched off once a pre-determined financial limit is reached. TRA General Director Mohamed Bubashait stated that "I am confident that these improvements should massively help reduce the element of "Bill Shock" which is a phenomenon that affects many travelers who are faced with high international roaming bills upon their return from their travels." Mr. Bubashait further added that "The revised regulation draws on best practice from other leading jurisdictions. It is the first comprehensive regulation of this nature in the GCC region and this further enhances TRA's reputation as the leading Telecommunications Regulator in the Middle East." (October 14, 2015) tra.org.bh

## Bangladesh



**Chairman: Sunil Kanti Bose**  
[Bangladesh Telecommunication Regulatory Commission (BTRC)]

State Minister for Foreign Affairs Shahriar Alam complained in a Facebook post about the poor quality service provided by Grameenphone, the country's largest mobile operator. According to The Independent newspaper, the minister wrote: "What is the problem with GP [Grameenphone]? Impossible to make calls. Call drops. Couple of months ago they used to send apology SMS after call drop. No trace of that even; also very poor network at Arani." He said two years ago he asked them look into it, but there has been no improvement. State Minister for Post and Telecommunication Tarana Halim, commenting on Alam's post, said: "I have been repeatedly asking them [GP] to improve their service quality. I have also asked Telenor. It seems they are more interested in making money than providing quality service." Grameenphone representative Talat Kamal told The Independent that it is aware of the minister's complaint and plans to take immediate action. The operator, 56 per cent owned by Norway's Telenor, has nearly 54 million mobile connections and a 42 per cent market share. It boosted its capex by 20 per cent to BDT15.2 billion (\$191 million) last year to fast-track its 3G rollout, which it said covers all 64 districts. Its capex to sales ratio was 24.2 per cent in Q2, while its EBITDA margin was 53.9 per cent. Just 13 per cent of its customers had 3G connections at the end of Q3, according to GSMA Intelligence.

(October 15, 2015) mobileworldlive.com

## Iran



**Chairman: Dr. Mohammad Ali Forghani**  
[Communication Regulatory Authority (CRA)]

The Communications Regulatory Authority of Iran (CRA) has announced a new tender for fixed wireless broadband spectrum in the 2300MHz, 2600MHz and 3500MHz bands. The watchdog says the frequencies can be used for time division duplexing (TDD) technologies

such as TD-LTE. The 2300MHz and 2600MHz auctions are aimed at existing fixed telephony and internet providers, while the 3500MHz band is open to all applicants. Successful bidders must agree to open their new networks to competitors on a wholesale basis. (October 21, 2015) telegeography.com

## Jordan



**Chairman of the Board of Commissioners/  
CEO: Eng. Ghazi Al-Jobor**  
[Telecommunication Regulatory Commission (TRC)]

Orange Jordan will complete the roll-out of Fourth Generation (4G) mobile service across the Kingdom by the end of November, the company's CEO, Jerome Henique, said. "We will focus on increasing connectivity across Jordan as part of our Essentials 2020 strategy for the coming years," Henique said at a press conference. Stressing that there is a significant room for growth in the Jordanian market and that demand for telecom services is on the rise, he said Orange Jordan will focus on high-speed broadband amidst increased data usage in the Kingdom. Henique added that Jordan is one of the most rapidly growing markets in this regard, noting that 4G technology will drive demand. Orange Jordan launched its 4G service in May after signing a deal with China's Huawei in March to build its 4G network and upgrade its second and third generation networks. Under its Essentials 2020 strategy, the telecom operator is allocating JD200 million for the enhancement of its network infrastructure. In addition to Orange Jordan, telecom operators Zain Jordan and Umniah are also licensed to provide 4G services.

(October 29, 2015) ammannewsdaily.com

Batelco has reached out to potential buyers including Emirates Telecommunications Group and Qatar's Ooredoo QSC about a sale of its Jordanian mobile operator, according to people with knowledge of the matter. The former Bahrain state monopoly, known as Batelco has also approached other companies and private-equity firms about a possible sale of Umniah Mobile Co., nearly a year after appointing Citigroup Inc. as an adviser on the disposal, the people said, asking not to be identified as the information is private. A sale of Umniah may fetch about \$500 million to \$600 million, the people said, adding that there was no formal agreement with any of the parties yet and talks may still fall apart. Batelco was working with Citigroup to evaluate options for Umniah, people familiar with the matter said in November last year. The Bahrain operator bought 96 percent of Umniah for \$415 million in 2006, according to data compiled by Bloomberg. Umniah had more than 3 million customers in Jordan and a market share of about 32 percent in 2014, according to its website. In Bahrain, Batelco competes with the local units of Kuwait's Mobile Telecommunications Co. and Saudi Telecom Co. Representatives for Batelco, Citigroup and Etisalat declined to comment. Officials for Ooredoo didn't respond to requests for comment.

(October 21, 2015) bloomberg.com

The number of Jordanians accessing the Internet via third and fourth generation technologies is consistently on the rise, figures by the Telecommunications Regulatory Commission (TRC) showed. By the end of

June this year, the number of Internet users in Jordan reached 6.2 million, compared to 5.7 million at the same time last year, according to the TRC. Similarly on the rise, the number of Internet subscribers in the Kingdom reached 2.029 million at the end of June, compared with 1.7 million at the end of 2014. The commission's figures indicate that the number of mobile broadband subscribers, which is provided by third and fourth generation technologies, reached 1.7 million of total subscribers, rising from 1.4 million mobile subscribers at the end of 2014. Of the total number of subscribers, the number of ADSL users reached 223,435 at the end of June, compared to 213,398 at the end of 2014. WiMax subscribers reached 114,133 at the end of the first half of this year, compared to 125,481 at the end of last year. Fourth generation services are currently provided by Zain Jordan and Orange Jordan. They will soon be provided by Umniah as well. In terms of mobile users in Jordan, TRC figures showed that mobile penetration reached 152 per cent at the end of June, with some 12.3 million active mobile subscriptions compared to 147 per cent at the end of last year, when total mobile subscriptions reached 11.1 million. Recent figures by the Ministry of Information and Communications Technology indicated that about 70 per cent of mobiles used in Jordan are smartphones. Conversely, figures showed that the use of landlines in the country is declining, with subscriptions dropping to 375,601 at the end of June, at a penetration rate of 4.6 per cent compared to 5 per cent at the end of 2014. (October 11, 2015) Jordantimes

and government organizations. The dynamic nature and application of M2M services are set to reshape the way the world does business. Cost saving remains one of the primary drivers for businesses to adopt M2M solutions as it enables them to save time and money by optimizing business processes. Benefits of M2M include enhanced energy efficiency, improving safety and security, supporting faster and better decision-making, and even enabling whole new products, services, and business models. Zain 's M2M services are provided with the support of the best experts in the field, who also benefit from Vodafone's global M2M experience. M2M connects machines, devices, and appliances wirelessly to the Internet, transforming them into intelligent devices that exchange real time information and open up a range of possibilities for how businesses run and grow. Through Zain 's M2M portal, the solutions enable real time monitoring of IoT/M2M traffic, including volume and advanced diagnostics, and also support fraud detection features and the ability to set traffic caps and issue various reports. Additionally, online ordering and trouble ticketing functions that are facilitated by M2M solutions can increase operational efficiency, and the APIs offered allow customers to integrate their back end systems and processes with M2M Platform to access its data and capabilities. Zain is also planning to conduct a series of industry-specific seminars in 2016 where corporate customers can learn more about IoT/M2M capabilities and their application into their businesses. (October 26, 2015) zawya.com

## Kuwait



**Chairman and CEO: Salim Alozainah**  
[Communication and Information Technology  
Regulatory Authority (CITRA)]

Zain announced the launch of Machine-To-Machine (M2M) services on its ultrafast network to Enterprise and Government sectors in Kuwait. The launch came as part of the expansion of Zain Group's existing Partner Market Agreement with Vodafone. The announcement was made during a press conference that was recently held at Zain 's main headquarters and saw the attendance of Fahad Al Jassim, Zain Kuwait 's Marketing Director, Waleed Al Khashti, Zain Kuwait 's Corporate Communications and Relations Director, Alberto Hernandez, Global Head of Commercial and Partners Markets, Vodafone Machine to Machine, and Bilal Agha, Zain Kuwait 's Corporate Marketing Senior Manager. The launch of M2M services is in line with Zain 's strategic vision to enrich the bundle of solutions and services it offers to corporate customers, especially that M2M services are one of the telecom industry's fastest growing sectors in the region. Vodafone is a leading global provider of M2M services and this partnership represents a new and important milestone in Zain 's entry into the M2M sector. The two telecommunication companies have been working together for a number of years, and this development will allow Zain to leverage Vodafone's experience and benefit from the opportunities offered by the exponential growth in M2M sector, as the company developed a clear strategy to contribute to this growth as well as an extensive range of IoT(Internet of Things)/M2M products and services from connectivity, managed connectivity and end-to-end solutions, designed to provide services for businesses

## Lebanon



**Chairman & CEO: Dr. Imad Hoballah**  
[Telecommunication Regulatory Authority  
(TRA)]

Lebanon's State Shura Council has ordered the Prime Minister's Tender Office to allow Egypt's Orascom Telecom Media & Technology (OTMT) to compete in the tender for a contract to manage one of Lebanon's two state-owned mobile network operators, Alfa and Touch. OTMT – which currently manages Alfa – had its initial offer rejected by the telecoms ministry which claimed that the Egyptian firm handed in documents on the deadline date (July 31) but too late (at 5pm, apparently after the tender office had shut at 4pm). The report says that the Council decision is mandatory as all government departments and agencies must fully comply with its verdicts. The ministry had reportedly intended to announce the results of the tender this week, whilst a source told Lebanese paper the Daily Star that only two out of the six companies that bought the terms of the contracts – namely Orange Group of France and Touch's current management company Zain Group (Kuwait) – had submitted initial bid applications. Although the source's information was not confirmed, under the tender rules there should be at least three companies competing for the contracts, meaning that OTMT's application would be required to make the process truly competitive, regardless of the argument over late entry. Vodafone Group of the UK bought tender documents but later stated it would not be bidding for a contract, whilst the other firms picking up documents were: Maxis (Malaysia), Turkcell (Turkey) and Detecon (part of Germany's Deutsche Telekom). The new mobile contracts are scheduled to start on January 1, 2016.

(October 9, 2015) telegeography.com An unconfirmed report from Reuters says that O2 Czech Republic has been granted rights to use spectrum in the 900MHz and 1800MHz bands covering the period 8 February 2016 until 22 October 2024. According to the cellco, the scope, rights and other conditions of the frequencies remain unchanged from its current allocation. It is understood that the operator paid a total of CZK432 million (US\$18.12 million) to extend its licensing rights.

(October 12, 2015) Albawaba.com

Cairo-based Orascom, which operates one of Lebanon's cellular networks, has filed a complaint to the Shura Council to protest the decision to disqualify the company from the upcoming tender bidding. "We raised this issue to the Shura Council in the hope that it revokes the decision of the Prime Minister's Tender Office to disqualify our company from participating in the tender to operate one of Lebanon's mobile networks," said a source close to Alfa, Orascom's branch that currently operates one of the networks. The Tender Office claimed that Orascom failed to submit the bidding offer on time and for this reason the company was disqualified. But the source stressed that Alfa General Manager Marwan Hayek submitted the offer on July 1, the final deadline for submitting the tender. The Tender Office plans to announce the names of the companies which applied for the management of the cellular networks this Thursday and disclose the names of the winners Friday. The source said that the Shura Council is supposed to pass its verdict Wednesday or Thursday at the most. The Tender Office is obliged by law to accept the final verdict of the Shura Council. Hayek earlier told The Daily Star that his company was taken by surprise when the Tender Office disqualified Alfa from the list of firms that are eligible to bid for operation of the network under the pretext that the firm failed to submit its application before the deadline. But the Telecommunications Ministry dismissed the company's claims of unfair treatment, adding that the firm had ample time to submit its request before the deadline expired. "Alfa has been operating one of the country's cellular networks for many years and they should know by now that the offices of the ministry close in the afternoon. Why did Alfa submit its request at 5 in the afternoon when the acceptance of the applications expired at 4?" a source at the ministry told The Daily Star. The source stressed that Telecommunications Minister Boutros Harb has no ulterior motives behind the disqualification of Alfa, adding that the minister always had good relations with the company. But the source at Alfa insisted that the company submitted the offer on the last day of the deadline. "The deadline was July 1 and we made our offer on that day. There is no reason to disqualify us from the tender," the source said. He added that the firm will accept any decision made by the Shura Council even if it was not in the company's favor. The sources said Orascom made a very good offer to the government to operate one of the networks. "Our prices are very competitive. We are also very familiar with the Lebanese market and we have been running the networks six years," the source said. There are more than 4 million cellular subscribers in Lebanon but this ceiling can be raised if the market opened up to privatization, experts argue. The telecoms revenues, both land line and cellular, are considered the second-greatest source of income to the treasury. (October 7, 2015) The Daily Star

## Morocco



**Director General: M. Azdine El Moutassir Billah**

[Agence Nationale de Reglementation des Telecommunications (ANRT)]

Telecom regulator National Agency of Telecommunications Regulation ANRT has reportedly awarded five new telecoms concessions on October 22. The regulator granted three 10-year licenses for the provision of telecommunications satellite services using VSAT technology to Maroc Telecom (IAM), Wana (Inwi) and the Green Development Corporation (SADV) for MAD19 million (US\$1.92 million) each. In addition, the regulator granted two authorizations for the establishment and operation of trunked radio networks (3RP) to SADV and Cires Telecom, with the two companies said to have paid MAD600,000 apiece. The ANRT however did not award any licenses for the provision of satellite telecommunications services using GMPCS technologies. In early March 2015 ANRT announced that it would launch three tenders – for 3RP, GMPCS, and VSAT concessions – on March 16. The regulator invited all interested parties to submit their license bids by 7 May. (October 29, 2015) Agence Ecofin

National Telecommunications Regulatory Agency (ANRT) has amended the terms and conditions for number portability services in the country with Decision 04/15 of October 8, 2015, following a consultation with the country's three operators. The updated legislation is aiming to improve 'the operational modalities' of the number portability regime by reducing the time required to port a number, in addition to facilitating the implementation of a centralized number portability database, which should be operational by June 2017. Further, the watchdog said that it will award a contract for the supply, installation and operation of the centralized database shortly. ANRT ordered the implementation of mobile number portability (MNP) to be completed by January 1, 2007, but granted operators extra time to set up the required systems after they complained of technical difficulties. At the end of April 2007 the regulator announced the commercial introduction of fixed and mobile number portability; since May 31, 2007 all operators are legally bound to port a customer's number on request. (October 15, 2015) telegeography.com

## Nepal



**Chairman: Mr. Digambar Jha**

[Nepal Telecommunication Authority (NTR)]

Nepalese mobile operator Ncell has signed a deal to improve its customer support systems using solutions from network analytics and monitoring firm Polystar. Polystar's Network Insight and Customer Insight products provide real-time intelligence on 2G and 3G network and service performance which can be used by engineers and customer service agents. Ncell says the deal will boost operational performance and improve customer experience. Ncell is majority owned by TeliaSonera and is the larger of Nepal's two mobile operators, with around 12.5 million subscribers at the end of June 2015. (October 14, 2015) telegeography.com

## Pakistan



**Chairman: Dr. Syed Ismail Shah**  
[Pakistan Telecommunication Authority (PTA)]

Pakistan's cellcos signed up 18.04 million 3G and 4G subscribers by end-September 2015 according to sector regulator the Pakistan Telecommunication Authority (PTA). Telenor continues to lead in the 3G space, with 5.49 million users, closely followed by Mobilink, which represented 4.91 million 3G customers. Similarly, third-placed Zong has kept just ahead of incumbent Ufone, with 3.77 million 3G users compared to the latter's 3.52 million. In the 4G sector, meanwhile, Zong retained its lead over its sole rival Warid, having pulled ahead in July 2015. At end-September 2015 Zong's 4G user base totaled 201,564 – up from 105,128 three months earlier – whilst Warid represented 156,827 LTE customers, increasing from 106,211 at end-June 2015.

(October 22, 2015) telegeography.com

Pakistan Telecommunication Authority, after mandatory approvals from Azad Jammu & Kashmir along with Gilgit Baltistan Councils, today published Information Memorandum for the spectrum auction of WLL (Wireless Local Loop) licenses for AJK and Gilgit Baltistan. PTA said that it plans to auction spectrum in 1900MHz and 3.5GHz bands for WLL licenses for all three telecom regions of AJK and GB. PTA is aiming to auction the spectrum for WLL license by December 2015. If all offered spectrum gets sold then PTA is likely to generate Rs. 90 million in total for 2x5 MHz in 1900MHz band and two 30 MHz unpaired lots in 3.5GHz bands. PTA said that operators can submit their applications with processing fee and sealed bids by November 20th, 2015. Then after announcing pre-qualification of potential participants, auction will be held on December 4th, 2015. IM said that spectrum will be allotted to potential buyers at base price if overall demand of spectrum is lower or equal to spectrum offered. In case the demand is greater than the spectrum offered, in either of the bands, PTA will conduct an open outcry auction to assign the spectrum rights. Both existing and new operators can take part in auction. (October 15, 2015) propakistani.pk

China Mobile Pakistan (CMPak), which operates under the Zong brand, complained to the Pakistan Telecommunication Authority (PTA) that interference in the 1.8GHz band it acquired in the auction last year is causing serious quality of service issues. Zong, Pakistan's third largest operator with a 22 per cent market share, spent \$210 million on 10MHz of the 4G spectrum, but the 1.8MHz frequency is also used by some versions of DECT 6.0 wireless phones, which causes interference in Zong's 4G services, ProPakistan reported. The PTA has banned the use of cordless phones operating at that spectrum and has fined importers, but the issue remains a problem for Zong. A Zong representative said it has asked the regulator to either eliminate the interference caused by the DECT phones or allocate it a different 4G frequency. The operator said it can't offer quality 4G service until the situation, which is impacting its ability to attract new customers and revenue, is fixed. The PTA is unlikely to act quickly on the matter given that the Minister for State for Telecom and IT recently hinted at another round of 3G/4G spectrum auctions in the coming months. One 10MHz block of 1.8GHz spectrum

went unsold in last year's spectrum auction, which was the last 3G sale in Asia. The government at the last minute added a 10 per cent tax on spectrum assets obtained in the auction. In the current environment, with a high tax burden on operators and modest growth, sources say operators are not interesting in paying out in another auction. Only second ranked Telenor is said to be profitable. (October 13, 2015) mobileworldlive.com

Pakistan Telecommunication Authority today published the results for its recently conducted Quality of Service Survey results for mobile operators' 2G, 3G and 4G services. This is authority's first QoS survey after the auction of 3G/4G spectrum. PTA said that results are based on Quality of Service survey that it conducted in various cities across Pakistan during 2015. Mobilink topped the charts for their 3G services with average download speeds of 4.04Mbps and average upload speeds of 3.17Mbps on its network. Zong remained second with average download speed of 3.66Mbps and average upload speed of 2.93Mbps across various cities of Pakistan. Telenor scored average download speeds of 2.22 Mbps and average upload speeds of 1Mbps while Ufone's average download speed stood at 1.27Mbps and average upload speeds of 1Mbps. Clearly the 10MHz blocks of 3G spectrum helped Zong and Mobilink to offer better 3G speeds to consumers. There are currently two 4G operators in country and Zong topped the 4G speeds with 9.4Mbps average download speed and 6.1Mbps of average download speeds. Warid, the other 4G operator, managed to achieve 5.95Mbps of average download speeds and 2.9Mbps of average upload speeds for its 4G LTE services. 2G services for all operators remained within the defined threshold levels, except for couple of instances. Overall 2G services remained above standard and almost all operators were closely ranked for majority of 2G KPIs.

- Mobilink topped for network uptime with a total of 0.23% of downtime experienced on its network
- Telenor topped for "Grade of Service" with 0.55%
- Telenor remained most accessible network with 99.56% accessibility
- Mobilink scored best for call connection time with 5.04 seconds
- Warid remained best for call completion ratio with 99.54%
- Telenor's End to End Call quality remained best with 3.78 MOS (Read below note for more info on this)
- Ufone and Warid scored 100% for Inter System Handover of CS voice
- Warid topped for end to end SMS delivery time with 3.1 seconds

Note: Mean Opinion Score or MOS is matrix used to measure call quality. MOS scores ranges from 1 for worst quality to 5 for excellent quality of call.

(October 10, 2015) propakistani.pk

Vimpelcom and Abu Dhabi Group, the parent companies of cellcos Mobilink and Warid have agreed a merger deal. According to the sources, the merger is intended to give Mobilink access to Warid's 4G network and spectrum resources. Warid would continue to operate independently, however, and the Abu Dhabi Group would retain a 20%-30% stake in the cellco. The sources also claimed that Mobilink has already completed due diligence and that a sale agreement will be signed by

the end of the year. Mobilink is Pakistan's largest cellco by subscribers with 33.4 million users at end-June 2015, equating to a market share of 29.0%. Warid, meanwhile, represented 8.5% of the market at that date with 9.8 million users, but was one of just two providers with permission to offer LTE services – the other being Chinese-owned Zong. (October 2, 2015) The Daily Times

## Qatar



**President: Mr. Mohammed bin Ali Al Mannai**  
[Communications Regulatory Authority (CRA)]

The Communications Regulatory Authority (CRA) issued a comprehensive competition framework to clarify anti-competitive behaviors in the communications sector and associated assessments and actions that will be taken by CRA if a service provider is found to have engaged in anti-competitive behavior. The main components of the framework, result of a transparent consultation process that engaged key stakeholders, are a Competition Policy, market assessment methodology, and a complaints process. "We developed this Policy to ensure that the market remains competitive and so that all stakeholders understand that CRA will not hesitate to initiate investigations into anti-competitive behaviors that pose challenges in the delivery of effective competition," said Mohammed Ali Al-Mannai, President of CRA. "The Policy will be implemented in telecommunication and postal sectors as well as access to digital media, the areas under CRA's direct jurisdiction. Furthermore, this Policy will also ensure that consumers receive the benefits of thriving competition in the market," he added. Specifically, this Policy prohibits agreements that may prevent or substantially limit competition. Such actions include price fixing; sharing of markets and customers; limiting or controlling investments; and agreements for fixed and minimum resale price maintenance. The prohibition can apply to different types of behaviors such as disclosing strategic information; or raising barriers which lead to anti-competitive foreclosures of other suppliers or buyers. Importantly, the Policy details the actions that CRA can take if a service provider is found to have infringed the prohibition on abuse of dominant positions or anti-competitive behavior. CRA will ensure that remedies are sufficiently well targeted and do not have adverse competitive effects; and that the implementation costs of the remedy do not outweigh its benefits. CRA may also respond to anti-competitive behavior with remedial actions ranging from enforcement of a specific behavior on the service providers involved in the alleged infringements of the competition aspects of the Telecommunications Law; or structural remedies depending on each case. CRA will continue to ensure that individuals, businesses, and government have access to a broad range of innovative and reasonably priced communications services. The CRA uses its full range of regulatory powers to ensure that competition in the communications sector thrives and consumer rights are protected. (October 21, 2015) cra.gov.qa

Ooredoo Qatar, Nokia Networks and Netgear have announced a 590Mbps speed test using LTE-Advanced (LTE-A) Category 11 technology on Ooredoo's network, which the partners claimed as a record for the Gulf Cooperation Council (GCC) region. The speed was achieved by aggregating 60MHz of spectrum across three bands and applying 256QAM higher order

modulation. Ooredoo recently signed an agreement with Netgear to launch a new range of LTE and LTE-A smart devices in Qatar, and the 590Mbps result was achieved on the Netgear Aircard AC810S mobile hotspot, which supports tri-band carrier aggregation (in Cat 11 mode enabling speeds of up to 600Mbps). Plans are in place for Ooredoo to launch the device commercially in 2016. Coinciding with the speed test, Ooredoo announced the commercial launch of the LTE-A Cat 6 Netgear AirCard 790S Mobile Hotspot, which uses 802.11ac Wi-Fi and carrier aggregation (CA) technology to deliver download speeds of up to 300Mbps. Ooredoo Qatar adds in its press release that it now has more than 1,030 4G LTE base station sites, and continues to add more every month. In addition, it has completed the upgrade of 544 outdoor sites to LTE-A ('4G+') and upgraded 182 indoor sites to 4G and four indoor sites to 4G+, including malls, business centers, residential towers and hotels.

(October 20, 2015) telegeography.com

## Saudi Arabia



**Acting Governor: Eng. Habeeb K. Alshankiti**  
[Communication & Information Technology Commission (CITC)]

Saudi Arabia's Capital Market Authority (CMA) suspended trading of Mobily's shares on 11 October, and then lifted the ban a day later. The suspension was regarding "a clarification from Mobily about the preliminary decisions issued by the Committee for the Resolution of Securities Disputes (CRSD) on the lawsuits filed by some investors regarding compensation for the losses they suffered as a result of the financial statements released by the company," CMA said in a statement. The CMA then said it had lifted the suspension when "Mobily announced that it received the first decisions issued by the CRSD regarding those lawsuits". Mobily, part-owned by Etisalat, said the CMA had rejected demands by some shareholders for compensation over a sharp drop in the firm's stock price. In June, the CMA suspended Mobily shares following an investigation over accountancy discrepancies affecting its 2013 and 2014 financial results, which eventually led to the departure of long-term CEO Khalid al Kaf. In August, shares resumed trading on Riyadh's bourse after the company reissued its financial results for 2014 and Q1 2015. Its restated 2014 loss grew to SAR 1.58 billion (\$421.3 million) from SAR 913 million and the company saw its profits slashed over the entire period by a total of almost SAR 1.76 billion. (October 14, 2015) mobileworldlive.com

Saudi Arabia's market regulator has rejected demands made by some shareholders in telecoms operator Mobily for compensation for the steep drop in its stock price, the company said. Mobily's announcement comes after the Capital Market Authority (CMA) earlier suspended the company's shares pending its response to the preliminary decisions of the regulator's Committees for the Resolution of Securities Disputes. The CMA did not say what these findings were, but Mobily said in a subsequent bourse filing that the committee had rejected investors' demands for compensation for losses suffered as a result of its financial statements. Mobily, part-owned by Abu Dhabi-listed Etisalat, was once a favorite of retail and institutional investors as it posted record earnings year after year and paid generous dividends, but the operator's shares are down 63 percent since last November when it restated some

of its previously announced profits. It subsequently made further adjustments to its earnings, eventually restating 27 months of earnings to March 31, 2015, which cut its total profits over the period by about 1.76 billion riyals (\$470 million). Mobily said it was obliged to publish its original results once approved by its board, in accordance with Saudi share listing rules. As such the committee had found no proof "of any violation by Mobily of its statutory obligations", its statement on Sunday said. The company had attributed its problems to the premature booking of revenues from wholesale broadband leases and mobile promotional campaigns and said it had also made further changes to the way it accounts for some contracts and the depreciation of property and equipment. In May the CMA referred a case of suspected insider trading at Mobily to public prosecutors. The regulator's investigation centered on a suspicion that the company might have breached one of its market listing rules and two articles of the Capital Market Law, including provisions against insider trading. "Mobily will announce any material developments to the company," its statement on Sunday said in reference to the case brought by disgruntled investors and other lawsuits. (October 11, 2015) [zawya.com](#)

## Sri Lanka



**Director General: Mr. P.B. Abeykoon**

[Telecommunication Regulatory Commission (TRC)]

Sri Lanka's largest mobile operator by subscribers Dialog Axiata has inked a deal with the country's Board of Investment (BOI), under which an additional US\$175 million will be invested in ICT infrastructure. The agreement encompasses expansion of Dialog's third-generation and fourth-generation broadband services alongside development of its fiber-optic transmission network, international telecommunications network and digital satellite television infrastructure. Dialog says it will also direct investments towards enhancing its digital services portfolio, including payment, commerce, education and health initiatives. The development agreement will increase Dialog Axiata's cumulative investment to US\$1.96 billion, the highest among all Foreign Direct Investments (FDI) operating under the aegis of the BOI. Dialog's Director/Group Chief Executive Dr. Hans Wijayasuriya commented: 'As espoused in our investment pledge, we will continue our thrust in supporting the vision of the government of Sri Lanka in accelerating the advancement of Sri Lanka's digital economy through the delivery of affordable and plural available services of the highest quality.'

(October 22, 2015) [telegeography.com](#)

## Turkey



**Acting Chairman: Dr. Omer Fatih Sayan**

[Information & Communication Technologies Authority (BTK)]

Tokyo-based NEC Corporation has been contracted to provide its iPASOLINK iX all-outdoor, ultra-compact microwave radio systems to Turkcell of Turkey, ahead of the latter's planned LTE launch. According to a vendor press release, the system will form part of the cellco's 4G network infrastructure. In the same press release, Atac Tansug, fixed network director of Turkcell, confirmed that the operator's LTE network will launch on April 1,

2016. Turkcell secured 4G-suitable frequencies in the government multi-band spectrum auction held on 26 August this year. The cellco paid EUR372.9 million (US\$424.0 million) for the 'A3' spectrum package.

(October 13, 2015) [telegeography.com](#)

## Tunisia



**President: Mr. Hassoumi Zitoune**

[National Telecommunication Commission (INTT)]

Ooredoo Tunisia and Tunisie Telecom (TT) have signed a radio access network (RAN) sharing agreement, the first of its kind in Tunisia. Details of the agreement have not been published, but representatives of the two cellcos noted that the pact would drive down rollout and maintenance costs, whilst expanding coverage and improving service quality. Nizar Bouguila, CEO of state-backed incumbent TT commented on the deal: 'It will allow us to accelerate the expansion of network coverage, [provide] a better quality of service to our customers and [create] significant savings to meet the challenges of investment in networks with very high bandwidth to meet the new uses of mobile internet.' His counterpart at Ooredoo, Ken Campbell meanwhile added that the pact would allow the cellco to 'make better use of its investments.' (October 19, 2015) [telegeography.com](#)

## United Arab Emirates



**Director General: H.E. Hamad Obaid Al Mansoori**

[Telecommunication Regulatory Authority (TRA)]

The Telecommunications Regulatory Authority (TRA) of the United Arab Emirates (UAE) has announced that fixed network sharing is now active across the country, allowing Etisalat and Du to share infrastructure and market their services in new locations previously only served by their rival. Du has confirmed that UAE residents looking to switch provider could be up and running on its network within seven days. The launch comes after some six years of negotiations between the regulator and the two telcos. 'It's an excellent step that we are giving the customer the opportunity to choose,' The National quoted, deputy director general of the TRA, as saying. 'The quality of service being offered will definitely change. Those who ignore it will lose customers now that the other operator has the same chance.' The network sharing agreement does not yet, however, cover pay-TV services, meaning those customers on multi-play packages which include TV are unlikely to be switching their voice and internet provider as this would see them losing their bundled discount. It is expected that the deal will be expanded to include pay-TV services by end-2016. (October 22, 2015) [telegeography.com](#)

The Telecommunications Regulatory Authority (TRA) of the UAE says that revenues from the country's telecoms sector rose 12.3% in 2014 to reach AED32.8 billion (US\$8.9 billion), compared to AED29.2 billion in 2013. The bulk of the total – AED25.5 billion – came from mobile services, the regulator said, followed by internet access with AED4.6 billion and fixed telephony at AED2.7 billion. Revenues from mobile services rose 16.9% in 2014, with the country home to almost 17 million cellular subscribers at the end of last year.

(October 6, 2015) [telegeography.com](#)



## REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

### REGULATORY UPDATES

#### Angola



Minister of Telecommunications and Information Technologies Jose da Rocha has announced that the nation's three main telephony providers – cellcos Unitel and Movitel and fixed line incumbent Angola Telecom – will soon be awarded universal concessions for a range of fixed and mobile services, as well as pay-TV. To enable the expansion of mobile services, meanwhile, the official explained that 'digital dividend' 4G spectrum would be made available to operators, noting: 'What should happen in the very near future is that we will no longer have the transmission of television and radio [in] analogue form, and move to digital form.' The frequencies freed up by the transition can then be used by mobile operators for wireless broadband services, enabling them to provide wider coverage and faster speeds, the Angop news agency quoted the minister as saying.

(October 6, 2015) Angop News Agency

#### Argentina



Telecoms regulator AFTIC blocked Telecom Italia's (TI) sale of a majority stake in Telecom Argentina to investment firm Fintech – a blow for the Italian incumbent's debt repayment

strategy. The regulator blocked the sale of a 68 per cent stake in Sofora Telecomunicaciones, Telecom Argentina's holding company, to Fintech, a deal worth \$960 million. AFTIC said Fintech had not demonstrated it had the "experience and expertise" to run the fixed and mobile operator. In addition, said the regulator, it was found that "Fintech Telecom was incorporated in the State of Delaware on October 18, 2013, less than a month before the Telecom Italia Group has accepted the offer to start the operation in question." A deal was agreed between the two firms towards the end of October. Another concern from the regulator, regarding Telecom Argentina's "social composition", was that it would fall under the control of an investment company. "For these reasons, the Board considered that Fintech is not in a position to operate and take control of the services and infrastructure of the company Telecom Argentina," the regulator concluded. Telecom Italia, which had net debt of €27 billion at mid-year, issued a statement to reassure investors. It said Fintech planned to appeal the regulator's decision. However, the Italian incumbent also laid out a contingency plan. If the sale of a 51 per cent stake in Sofora to Fintech (an initial 17 per cent has already been sold to the investment firm) is not completed by April 2017, TI has two options. One option is to withdraw from the agreement with Fintech and exercise a six-month call option to purchase (either

directly or through another part of the group) the 17 per cent stake. The second option is to pursue the sale (subject to regulatory approval) of its 51 per cent controlling interest in Sofora to a third-party buyer, with a guarantee from Fintech of total proceeds to Telecom Italia of at least \$630.6 million. If the proceeds of such a sale exceed the minimum guaranteed by Fintech, the difference will be allocated between Telecom Italia and Fintech according to an agreed formula. If Telecom Italia is unable to complete the sale to a third party within a further period of two and a half years, the agreement with Fintech will be terminated, Fintech will pay Telecom Italia \$175 million and Telecom Italia will benefit from a six-month call option to purchase (either directly or through another part of the group company) the 17 per cent minority stake in Sofora previously sold to Fintech. Telecom Italia previously received certain guarantees of performance under the 2014 agreements with Fintech, which are secured by the pledge of collateral with a value of \$600.6 million. (October 16, 2015) [mobileworldlive.com](http://mobileworldlive.com)

## Austria



Austria's finance ministry hit back at a report which said the country was preparing to sell its 28 per cent stake in Telekom Austria to America Movil, the operator's majority owner. The denial comes after Austrian newspaper Kurier reported that the country's government was planning the sale to Carlos Slim's America Movil, which already owns just under 60 per cent of the Austrian incumbent. According to Reuters, a spokeswoman for the finance ministry said "there are no such plans", in response to the claims. "There is nothing in this." It was initially reported that the Mexico-based operator group "signaled an interest in a total takeover", including the 28 per cent of the operator held by state owned OBIB, which is reportedly worth approximately €900 million on current market prices. The sale is seen as one of the "few possible sources of finance" for the ministry to fill the country's budget gap and would also rid the problem of further capital increases at Telekom Austria for "cash strapped ministers", reported Kurier. The company last announced an anticipated €1 billion capital increase in November 2014, with America Movil and OBIB pledging commitment. America Movil cemented majority control of Telekom Austria in July last year, and has indicated in the past it wants to ramp up its interests in Europe. It also holds a stake in Dutch operator KPN. (October 19, 2015) [mobileworldlive.com](http://mobileworldlive.com) The Federal Communications Commission (FCC) disclosed what it is willing to pay TV stations for acquiring their spectrum, which will be resold to mobile operators in its planned incentive auction. This is the first stage in a process that will subsequently involve the US regulator re-auctioning the frequencies in early 2016 to operators craving spectrum for mobile broadband. The FCC is attempting to lure TV stations with bids as high as \$900 million in New York City. Other leading US cities, including Los Angeles and Chicago, also carry big bids. Bids tail off for more remote or rural locations. A station in the Virgin Islands will fetch only \$10 million, for instance. The bids are expected to come down over time, as the FCC uses a reverse auction to encourage TV stations to commit early to cashing in their frequencies. Station owners will now mull over whether they want to participate. The filing window opens on December 1 and closes December 18. Releasing prices now gives broadcasters at least 60 days to consider the prices on offer. The broadcasters also have a choice over the type of bid they make. The deadline for that choice is March 29, 2016. Either they choose to give up their license or

agree to move to another set of frequencies. Companies that want to participate in the second stage of the auction need to register their interest by 28 January 2016. (October 19, 2015) [mobileworldlive.com](http://mobileworldlive.com)

## Bahamas



Locally-owned triple-play provider Cable Bahamas Limited (CBL) has defeated rival Virgin Mobile Bahamas to claim the Bahamas' second mobile license, paving the way for the operator to launch the nation's first alternative mobile services to compete with incumbent Bahamas Telecommunications Company (BTC). The Cellular Liberalization Task Force (CLTF) announced earlier this week that CBL had won the second phase of the selection process, a spectrum auction overseen by sector watchdog the Utilities Regulation and Competition Authority (URCA), with a final bid of BSD62.5 million (US\$62.1 million). Under the terms of the license, CBL will now establish a new company (NewCo) to hold the license. NewCo will be 49%-owned by CBL, which will retain full management and board control, whilst the remaining 51% will be owned by a new holding to award the 15-year license by the end of the year. Company (HoldingCo), shares in which will be sold to Bahamian investors. The CLTF expects in an interview with local newspaper Tribune 242 CBL's VP of marketing, David Burrows, stressed the importance of the company's existing infrastructure in completing the 'mammoth task' of the government's demanding rollout schedule. Mr. Burrows added that CBL is optimistic about its ability to take on former monopoly holder BTC, saying that CBL is 'well poised' due its strong data network: 'It's more and more about data. That's one of the things that stands out for CBL...Wherever you're going, that network we have in place will be able to deliver that data.' Pan-Caribbean group Digicel was long considered the front runner for the new concession, but backed out in April 2015, during the early stages of the selection process. No statement was given on the reason for its withdrawal, although the group had previously been critical of the ownership and rollout obligations of the new concession. (October 21, 2015) [telegeography.com](http://telegeography.com)

## Belgium



A long-running legal battle between mobile providers in Belgium has been settled, with former monopoly operator Proximus agreeing to pay EUR120 million (US\$136.3 million) to rivals Mobistar and BASE Company. The case was launched in 2003, alleging that Proximus had abused its dominant position in the market in the late 1990s and early 2000s by 'applying tariffs from the past for mobile telecommunication services that are differentiated between on-net and off-net voice communications'.

A statement from the firms says that the settlement agreement comes 'without any harmful recognition and translates the willingness of the parties to put an end to litigation proceedings'. The deal will see BASE getting EUR66 million from Proximus and Mobistar EUR54 million. Proximus said earlier this year that it had made no provisions to cover a payout as it maintained that there had been no wrongdoing.

(October 22, 2015) [telegeography.com](http://telegeography.com)

The EU's competition watchdog has opened a full investigation into the proposed acquisition of Belgian

mobile operator BASE Company by domestic cable TV and broadband provider Telenet, which is part of the Liberty Global group. A statement released by the European Commission (EC) said that its preliminary review of the deal had found that it could harm competition in Belgium's mobile sector, where BASE is the smallest of the three network operators and Telenet is the largest MVNO. EU Competition Commissioner Margrethe Vestager commented: 'We want to make sure that consumers in Belgium do not suffer higher prices and less choice as a result of this proposed takeover.' A decision on the tie-up is due by 18 February. Liberty announced in April this year that it had agreed a EUR1.3 billion (US\$1.4 billion) deal to buy BASE from KPN of the Netherlands. BASE had around 21% of all mobile subscribers in the country at the end of June, with 2.8 million users, while Telenet claimed 953,700 mobile users at the same date. (October 7, 2015) [telegeography.com](#)

## Benin



In a process with knock-on benefits for the mobile broadband sector, ICT minister Etienne Kossi has announced that Digital Terrestrial Television (DTT) will be available by the end of 2015. Kossi explained that December is the new deadline set by the Beninese government to begin the process of analogue-to-digital TV migration. A national commission involving all stakeholders is coordinating the digital migration process in order to meet the new deadline. The former ICT Minister Jean Dansou enacted Benin's law on analogue-to-digital broadcasting transition on 30 September 2014. Dansou had also declared in December 2014 that Benin would meet the deadlines set by the International Telecommunication Union (ITU) in partnership with the African Telecommunications Union (ATU) regarding digital switchover (June 2015 for UHF services and June 2020 for VHF in certain countries), with the by-product of freeing up the 'digital dividend' 700MHz-800MHz spectrum bands for 4G LTE mobile broadband networks, potentially from 2016. (October 2, 2015) [Telecompaper](#)

## Bhutan



Bhutan could have its third link to the internet by 2017. However, it is yet to be determined from where this link would be established. One of the main reasons why the country's IT park was not able to attract any major international IT companies was the lack of true redundant or back up link to the internet. Currently, while Bhutan does have two links to the internet through Gelephu and Phuentsholing, both links converge in Silliguri, which in a way eliminate the redundancy aspect. If connectivity in Silliguri is disrupted for whatever reasons, the possibility of both links becoming unavailable does exist. The government has been attempting to establish a third link to the internet via Cox's Bazaar in Bangladesh. Efforts have been ongoing for some years now. "Tender process is ongoing to recruit a consultant to carry out feasibility studies on how best to bring in a truly redundant international connectivity to Bhutan," Department of Information Technology and Telecom officiating director, Jigme Tenzing said. "The study will also look at bringing in connectivity through Cox's Bazaar in Bangladesh through the north east states of India." He added that feasibility studies will be completed before June 2016. The study will not only look at Coz Bazaar but other areas as well. "The consultant will study and find out other options, if any," Jigme Tenzing said. "However, Cox's Bazaar

connectivity is of prime interest." Bhutan is most likely to have its third link to the internet by 2017. "At best, physical connectivity works will take at least nine months after the feasibility studies have been carried out and negotiations carried out with the Government of India and Royal Government of Bhutan," Jigme Tenzing said. Having a third link to the internet is expected to make Bhutan a more attractive destination for IT investment. "It will improve the reliability of international connectivity to Bhutan by providing an alternative exit route other than Silliguri which is currently the exit point of all our international connections," Jigme Tenzing said. "This will help attract other IT/ITES FDI businesses to Bhutan." Bhutan's total international bandwidth is around 5.65 Gbps (giga bits per second), with both Bhutan Telecom and Tashi InfoComm combined.

(October 6, 2015) [kuenselonline.com](#)

## Bosnia and Herzegovina



Bosnia's Communications Regulatory Agency (CRA) has published data for the quarter ended June 30, 2015, revealing that there were 3.407 million mobile subscribers in the country at that date, down marginally from 3.418 million three months earlier. Mobile market leader BH Telecom retained its lead in the sector, accounting for 45.44% of the country's mobile subscriber total, up from 44.98% at end-March 2015, while second-placed Telekom Srpske (m.tel) saw its share of the pie decline slightly, from 42.09% at 1Q15 to 40.97% three months later. Third-placed HT Mostar remains some way behind, meanwhile, representing 13.06% of the nation's mobile accesses at 30 June 2015, up from 12.68%. Rounding out the sector were the nation's MVNOs, with the longest-established of those – IZI Mobil – having signed up approximately 15, 675 customers to claim a market share of 0.46%, up from 0.18% at end-March 2015. Blicnet and Logosoft meanwhile accounted for just 0.06% and 0.01% of Bosnian mobile subscribers at end-June 2015, respectively. Broadband accesses in Bosnia totaled 544,483 at the end of June 2015, barely changed from the 544,907 reported three months earlier by the CRA. xDSL remains the most popular technology type, with almost 54% of customers (292,656) signed up to such a connection, though this was down by roughly 1% from 295,483 at 1Q15. Cable broadband increased in popularity, with such accesses numbering 191,316 at the end of the reporting period, up 2.69% quarter-on-quarter. (October 8, 2015) [telegeography.com](#)

## Botswana



The part-privatization of Botswana Telecommunications Corporation Limited (BTCL) is set to be postponed once again, with the country's Public Accounts Committee (PAC) recommending that the current deadline of December 2015 be pushed back. There have been unspecified 'challenges' to the sale process. Earlier this year Botswana's Minister of Transport and Communications, Tshenolo Mabeo, said the delays in the planned initial public offering (IPO) in the fixed line operator were due in part to problems with the transfer of infrastructure from BTCL to national networks firm BoFiNet. Mabeo said that the original 'Possession and Use' agreement, which was due to be signed in November 2014 ahead of the planned IPO the following month, was not 'fit for purpose'. A new Possession and Use document was eventually signed on 4 March 2015, transferring all BTCL infrastructure to state-owned

BoFiNet, which was established in 2012 to take over the running of the country's telecoms networks, with BTCL acting purely as a service retailer. Having initially been planned for 2011, the sale first ran into problems in 2012, before an IPO was cancelled in August 2014. The offer was then rescheduled for 7 November, but problems with the sale of shares to employees caused yet another postponement to end-December, but this date too was missed. 44% of BTC's shares will be available for purchase by individual investors and Batswana companies, while 5% will be reserved for the telco's employees through an Employee Share Ownership Program (ESOP). The remaining 51% will be retained by the government.

(October 13, 2015) News Agency BOPA

## Brazil



The Board of Directors of Brazil's National Telecommunications Agency (ANATEL) has approved the bidding of radio frequency bands with the aim of expanding the telecommunication services coverage in the country. Lots will be available on a municipal level in order to encourage the participation of small and medium providers and it will be possible to pay in up to ten installments with low interest rates. Lots will be offered in the 1.800 MHz, 1.900 MHz and 2.500 MHz bands for mobile telephony, broadband and radio taxi services. The winners will receive licenses for 15 years, extendable for another 15. (October 23, 2015) telegeography.com

## Bulgaria



Telecoms regulator the Communications Regulation Commission (CRC) has invited all interested parties to submit their bids for participation in a tender for frequencies in the 2500MHz-2690MHz spectrum band by October 29, 2015. According to Decision No. 477 (dated October 8, 2015), the regulator is planning to award 14 2x5MHz paired blocks (frequency division duplex [FDD]) in the 2500MHz-2570MHz/2620MHz-2690MHz band and ten 1x10MHz blocks (time division duplex [TD]) in the 2570MHz-2620MHz band. In April 2013 the Bulgarian government announced that the National Security Service (NPS) will start the release of frequencies in the 2500MHz-2690MHz band (occupied by the military), for terrestrial systems capable of providing communications services. The CRC opened a tender (with Decision No 489 of July 9, 2013) for five 2x5MHz paired blocks and three 1x5MHz blocks in the band in July 2013. The licenses were to be issued for a ten year period, with operators required to establish and operate 3G and/or 4G networks covering 35% of the territory within two years from license award, going on to reach 55% coverage within five years. Citing a lack of interest, however, the CRC cancelled the tender in August. (October 15, 2015) telegeography.com

## Cambodia



The Council of Ministers has approved a new draft telecommunications law, which is aimed at enhancing the regulation of the sector and improving service quality. The government has yet to officially publish a copy of the new 114-article draft law, which has been under development by the Ministry of Posts and Telecommunications Cambodia (MPTC) for a number of years. The main purpose of the law is to ensure the quality and effective use of infrastructure, networks and telecommunications services, encourage

telecommunications investment, protect consumers and earn national revenue,' a statement from the Council of Ministers read. The next stage will see the draft law sent to the National Assembly for debate.

(October 12, 2015) The Cambodia Daily

## Canada



Bell Canada has been fined C\$1.25 million after its employees were found to be giving positive reviews for its own mobile apps on app stores. Last November, a number of Bell employees were encouraged to post positive reviews and ratings of the free MyBell Mobile app and Virgin My Account app on the iTunes App Store and the Google Play Store, without disclosing that they work for Bell. Bell acted quickly to have the reviews and ratings removed as soon as it became aware of the matter. Nevertheless, the Canadian Competition Bureau determined that these reviews and ratings created the general impression that they were made by independent and impartial consumers and temporarily affected the overall star rating for the apps. The apps allow Bell customers to manage their existing mobility accounts directly from their mobile devices. Bell provided full, timely and ongoing co-operation with the Bureau's inquiry. In addition to the consent agreement, Bell has indicated that it will sponsor and host a workshop to promote, discuss and enhance Canadians' trust in the digital economy, including the integrity of online reviews. (October 22, 2015) cellular-news.com

## China



China's Ministry of Commerce approved Nokia's proposed acquisition of French rival Alcatel-Lucent with conditions, almost completing the 15.6 billion euro (\$17.6 billion) deal's antitrust process. The ministry said the Finnish telecom network equipment maker had agreed to meet certain terms by December 10, mainly relating to the use of wireless telecommunication standards and patent licensing. The terms were imposed in keeping with China's anti-monopoly regulation to ensure market competition isn't harmed by the takeover, it added in a statement on its website. As part of its talks with China, Nokia in August agreed to create a joint venture, Nokia Shanghai Bell, with China's state-owned Huaxin. "We look forward to maintaining our deep commitment to China and playing a key role in the country's shift towards an innovation-driven economy," Nokia chief executive Rajeev Suri said in a statement on Monday. Nokia and Alcatel still need formal approval from the French government, after which Nokia will proceed with its all-share offer. The takeover is expected to close in the first half of 2016.

(October 19, 2015) telecomengine.com

China's State Council has unveiled plans to invest CNY140 billion (US\$22.0 billion) in expanding broadband network infrastructure in underserved areas of the country by 2020. Under the plans, 30 million households would have their internet access improved, including some 50,000 villages currently without broadband access. The targets are the latest in a series of investment plans announced this year to help drive China's digital economy, after Premier Li Keqiang called for operators to lower prices and improve access speeds. In July this year, a spokesperson for the Ministry of Industry and Information Technology (MIIT) confirmed that China was

looking to invest CNY435 billion in improvements to internet infrastructure by the end of the year – including the deployment and evolution of 4G LTE networks.

(October 15, 2015) reuters.com

China Mobile, China Telecom and China Unicom agreed to transfer a combined 213.9 billion yuan (€29.5 billion) worth of towers and related assets to their new tower-sharing joint venture. The telcos formally agreed to establish the new company, originally named China Communications Facilities Services Corporation Limited but now called China Tower, in July 2014. It was formed with the aim of reducing duplication of towers and related infrastructure. Ergo, China Tower will be responsible for the construction, maintenance and operation of towers and ancillary systems, such as power and air conditioning, for base stations. In a regulatory filing on Wednesday, China Mobile said it will transfer assets worth CNY116.4 billion to China Tower. In similar filings, China Unicom and China Telecom said they will transfer assets worth CNY63.2 billion and CNY34.3 billion respectively. All three operators will then lease assets back from China Tower. The transactions are expected to complete on 31 October, upon which China Mobile will own 38% of China Tower, China Unicom will own 28.1%, and China Telecom will own 27.9%. Meanwhile China Reform Holdings – an entity controlled by the government's State-owned Assets Supervision and Administration Commission (SASAC) – will take a 6% stake. (October 15, 2015) totaltele.com

## Comoros



The National Authority for Regulation of ICT (ANRTIC) has awarded Comoros' second telecoms license to Madagascan operator Telecom Malagasy (Telma),

thus removing the long-held monopoly of incumbent Comoros Telecom (ComTel). Announcing the concession winner on October 1, ANRTIC disclosed that Telma bid KMF7.010 billion (US\$16 million) for the concession while its sole rival for the license, Mauritius Telecom, offered just KMF3.931 billion. The license is valid for 15 years and will allow Telma to provide fixed and mobile (2G,3G,4G) services to the public upon full payment. Telma offers fixed and mobile services in Madagascar, while former Comorian monopoly ComTel launched the first GSM and ADSL networks in the country in October 2003 and April 2007, respectively – the operator has since remained the sole provider of wireless and fixed services in Comoros. Applicants (or parent companies) for the concession on offer were required to have at least one million subscribers to their existing fixed or mobile services, and to be in possession of at least USD20 million in funding. Interested parties were required to have registered their interest by May 18, 2015, and to have submitted their bids by June 25, 2015.

(October 5, 2015) Agence Ecofin

## European Union



Companies could face action from European privacy regulators if the European Commission and United States do not come up with a new system enabling them to shuffle data across the Atlantic in three months, the regulators said. The highest EU court last week struck down a system known as Safe Harbour used by over 4,000 firms to transfer personal data to the United States, leaving companies without alternatives scrambling to put new legal measures in place to ensure

everyday business could continue. Under EU data protection law, companies cannot transfer EU citizens' personal data to countries outside the EU deemed to have insufficient privacy safeguards, of which the United States is one. EU data protection authorities meeting in Brussels to assess the implications of the ruling said in a statement that they would assess the impact of the judgment on other data transfer systems, such as binding corporate rules and model clauses between companies. "If by the end of January 2016, no appropriate solution is found with the U.S. authorities and depending on the assessment of the transfer tools by the Working Party, EU data protection authorities are committed to take all necessary and appropriate actions, which may include coordinated enforcement actions," the watchdogs said in a statement. The Commission and the United States have been in talks for two years to reform Safe Harbour after former U.S. National Security Agency contractor Edward Snowden revealed the existence of mass U.S. government surveillance programs. Talks have been hampered by the difficulty of extracting sufficient guarantees that U.S. authorities' access to personal data would be limited and proportionate. The regulators said in their statement the EU and the United States should negotiate an "intergovernmental agreement" providing stronger privacy guarantees to EU citizens, including oversight on government access to data and legal redress mechanisms. Multinationals can set up internal privacy rules which have to be approved by regulators to transfer data to the United States, known as binding corporate rules. However, only about 70 companies currently use this system. Lawyers have said alternative data transfer systems could also be at risk to legal challenge since they do not provide stronger protection against U.S. government snooping than Safe Harbour did. "The good news is that the European data protection authorities have agreed on a kind of grace period until the end of January," said Monika Kuschewsky, a lawyer at Covington & Burling. (October 19, 2015) telecomengine.com

The European Commission has pushed back its deadline to rule on Liberty Global's planned acquisition of Belgian mobile operator Base to March next year. The Commission's competition arm has extended its provisional deadline to issue a decision in the case until 3 March 2016, it announced on Wednesday. The move comes just two days after the Commission revealed it will conduct an in-depth investigation into the proposed deal on the grounds that it could damage competition in the market. At the time it set a deadline of 18 February for a ruling, some 10 working days earlier than the new date. It did not give a reason for the delay. Liberty Global's Belgian cable operation Telenet agreed to pay €1.33 billion in cash for Base, currently owned by KPN, in April. Telenet has a presence in the mobile market through a mobile virtual network operator (MVNO) deal, but the addition of Base will give it its own network and a much stronger mobile business. Telenet had 895,000 MVNO customers at the end of last year, compared with Base's 3.3 million mobile subscribers. The move is in line with a growing M&A trend in Europe and further afield, as operators seek to buy the new capabilities they need to become full service providers. While a number of similar deals have been approved by the European Commission in the past couple of years, albeit with remedies attached, a change of personnel in Brussels appears to have brought with it a harder stance on competition. New competition commissioner Margrethe Vestager blocked Telenor and TeliaSonera's plans to merge in Denmark last month on the grounds that the

market needs four mobile network operators to remain competitive. Vestager insists that all proposed deals will be assessed on their own merits, but the Denmark decision has left other players involved in consolidation – including Telenet and Base - facing an uncertain future.

(October 7, 2015) [totaltele.com](http://totaltele.com)

## France



France's Regulatory Authority ARCEP has approved the applications of the country's four existing mobile network operators (MNOs) to participate in the upcoming 700MHz spectrum auction. The regulator said that the examination process concluded that the applications from Bouygues Telecom, Free Mobile, Orange France and Numericable-SFR were all eligible and satisfied the qualification criteria. As a result, the quartet is authorized to participate in the 700MHz auction, which will commence on November 16, 2015. The government is planning to free up 2x30MHz blocks of spectrum in the 703MHz-733MHz/758MHz-788MHz bands between April 2016 and June 2019, thanks to improvements in digital terrestrial TV (DTT) compression standards, the so-called 'second digital dividend'. The 700MHz licenses will come with a base price of EUR416 million (US\$454.7 million) per 2x5MHz block, with no buyer allowed to purchase more than three blocks (2x15MHz). Further, bidders will not be allowed to exceed a cap of 2x30MHz of combined spectrum in the 700MHz, 800MHz and 900MHz bands. (October 23, 2015) [telegeography.com](http://telegeography.com)

France's 4G-friendly 700MHz spectrum auction will take place on 16 November, according to the country's telecoms regulator ARCEP. The regulator, which first announced the auction in June, stuck to its timelines after previously earmarking November to hold the process, with the view of distributing licenses to winning parties by the end of the year. All four of the country's domestic operators, including Bouygues Telecom, Free, Orange, and SFR, submitted applications for inclusion in the process last month, with the regulator set to look at the proposals by the end of October. 700MHz spectrum is being freed up in France by the country's television broadcasters, and ARCEP intends to raise at least €2.5 billion from the sale. According to Les Echos, the process will take a few days to complete, and involve eight rounds of bidding a day. Six blocks of 2x25MHz are on offer, and a single operator will be unable to acquire more than three in total. Operators will also be unable to hold more than 2x30MHz of low frequency spectrum in total, across the 700MHz, 800MHz and 900MHz bands combined, according to guidelines set by the regulator in June, with the minimum bid for each block set at €416 million each. Orange's European chief told Mobile World Live earlier this month the upcoming 700MHz is a necessary step before consolidation can happen in the market, with France still operating with four established players. (October 14, 2015) [mobileworldlive.com](http://mobileworldlive.com)

France's Competition Authority (Autorite de la Concurrence) has opened ex-officio proceedings in order to review whether domestic telecoms operator Numericable-SFR has complied with its commitments in relation to a co-investment agreement with Bouygues Telecom for the deployment of fiber-optic infrastructure. In December 2010, SFR and Bouygues Telecom signed an agreement on the horizontal deployment of fiber-optics in certain very densely populated areas of the

country; under the terms of the agreement, SFR agreed to deploy a fiber-to-the-home (FTTH) network on behalf of the two operators, with Bouygues Telecom contributing financially to the operation. Following the November 2014 acquisition of SFR by Numericable's parent company Altice Group, the new owner committed to maintain the fiber-optic agreements that SFR had reached with other operators prior to the takeover. In regards to the agreement with Bouygues Telecom, Numericable had committed 'to connect the deployed horizontal network to the vertical network of buildings' within two years (for the network sharing points that existed before the December 2010 deal) and three months (for the ones installed after). Moreover, Numericable had committed to provide maintenance of the implemented infrastructure under transparent and non-discriminatory conditions. Bouygues Telecom, however, pointed out that the pace of connections achieved by Numericable-SFR experienced a 'significant slowdown' since the November 2014 merger, which in turn raised concerns that Numericable could not achieve its objectives within the set deadlines, the regulator said. For its part, Numericable is disputing the delay claims, with Numericable-SFR's Deputy CEO Jerome Yomtov as saying: 'We respect the commitments, projects are underway and the production rate is accelerating.'

(October 13, 2015) [Les Echos](http://LesEchos.com)

France will soon get a boost in internet speed as its telecoms regulator ARCEP announced that it had received applications for the upcoming 4G mobile spectrum auction. The auction saw all four major mobile carriers in the country including Bouygues Telecom, Iliad, Orange, and Numericable-SFR submitting their application to participate in the event. Business Insider reported that the 4G spectrum auctioned is for the 700 megahertz airwaves which were previously reserved for television broadcast. Mobile World Live detailed that there are six airwaves block of 2x5MHz to be auctioned and each mobile carriers are allowed to hold only three blocks according to ARCEP's guideline. An announcement will be made by the French regulator in October on which company will be allowed to enter the auction. The auction will be held in November this year and the government is expecting to obtain a minimum of 2.5 billion euros from the auction as each block of 4G spectrum will be auctioned at a starting value of 416 million euros according to Reuters. The low-frequency spectrum is in high demand by the mobile carrier as it could speed up its network speed. The internet speed in the country is getting slow due to an increase in the data traffic usage by the French as the mobile has become part of everyday life. The auction is part of ARCEP's future planning where it is planning to ensure the French city center will get 100 percent network coverage by the end of 2027. The agency also said that the government is planning to make sure 40 percent of the population to be able to enjoy the internet network by the end of 2020. This is not the first spectrum auction held by the French government as they had managed to raise 2.639 billion euros in December 2011. The money raised through the auction of the 800 MHz airwaves spectrum. The government considered the spectrum airwaves as the intangible asset and could help bring revenue to the country. The French government is also planning to encourage investment in the communication industry among the mobile carriers through this auction. The majority of the revenue raised from this auction will be diverted to the country's defense budget. Earlier

in June this year, Germany had done a similar process of auctioning its 700 MHz spectrum. The government manages to raise 5.08 billion euros through the two weeks intense bidding process. (October 6, 2015) [vcpost.com](#)

Bouygues Telecom, Free Mobile, Orange and SFR have all applied to take part in France's upcoming spectrum auction, regulator ARCEP announced this week. In a statement on Tuesday, the watchdog said it will evaluate the telcos' submissions to ensure they satisfy its eligibility criteria. "Once this examination process is complete, around one month from now, ARCEP will publish a list of the candidates that are eligible to participate in the frequency auctions," ARCEP said. France has set a reserve price of €416 million per 2x5 MHz block of 700-MHz spectrum, meaning that if all the frequencies are sold, the government will raise at least €2.5 billion. In June, Germany became the first major economy in Western Europe to auction 700-MHz spectrum, selling 2x30 MHz and raising just over €1 billion. It was sold along with frequencies in the 900 MHz, 1500 MHz and 1800 MHz bands, and the process raised €5.1 billion overall. France's 700-MHz auction is due to kick off in November. Licenses will carry coverage obligations requiring winners to provide services in rural areas and along 29,000 km of railway lines. (October 1, 2015) [totaltele.com](#)

Regulatory Authority ARCEP has issued domestic cellco Orange France with authorization to conduct trials of '5G technologies' in the city of Belford until the end of 2016, as part of Europe's 5G Infrastructure Public Private Partnership (5G-PPP) program. The project will examine 'the conditions of use for millimeter-wave frequency bands between 6GHz and 100GHz for 5G', which represent a key component in achieving the performance objectives being set for 5G technologies. ARCEP authorized Orange to perform trials in the following bands: 3600MHz-3800MHz, 10500MHz-10625MHz and 17300MHz-17425MHz.

(October 1, 2015) [telegeography.com](#)

## GSMA



A new report from the GSMA reveals the diverse mobile landscape across the Arab States of the Middle East and North Africa, a region where some markets

enjoy penetration rates above 75 percent while others lag behind with fewer than half the population having a mobile subscription. Bahrain, Kuwait and the UAE are highly advanced Gulf States, but penetration rates fall below 50 percent in Palestine, Sudan, Syria and Yemen. Indeed, subscriber growth across the 18 Arab State markets examined in the report - Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen - is expected to be slower than the global average between now and 2020, with subscriber penetration hitting 57 percent (233 million subscribers) by the end of this decade, behind a global figure of 59 percent. The report, 'The Mobile Economy - Arab States 2015', attributes this to several factors: "the declining growth potential in already highly penetrated markets; the challenge of growing penetration in the lower income and rural-based groups in less developed markets; and the unstable political and economic conditions that currently exist in several regional markets." The number of unique mobile subscribers in the Arab States as a whole reached 199 million at the end of 2014, equivalent to 54 percent of the region's population.

Despite the challenges, the report forecasts fast growth in mobile broadband and smartphone usage. It predicts that mobile broadband networks will support more than two-thirds (69 percent) of all mobile connections across the Arab States of the Middle East and North Africa by 2020, up from just 34 percent at the end of 2014. In terms of hard numbers, GSMA expects there to be 350 million 3G/4G mobile broadband connections in the region within the next five years. The report argues that such growth is being driven by operator investments in 3G and 4G networks and rising smartphone adoption. Over the last four years, mobile operators across the Arab States are said to have spent more than \$40 billion on capital investments, or approximately 18 percent of total revenue. This investment has focused on improving network coverage, increasing network capacity, and deploying 3G/4G mobile broadband networks. According to the report, 3G networks are now live in every country in the region except one, while there are 23 live 4G networks in ten countries in the region and 4G launches planned in a further eight markets. Meanwhile the number of smartphone connections in the region is forecast to almost triple between 2014 and 2020, reaching 327 million (around two-thirds of the total connection base). (October 20, 2015) [telecomreview.com](#)

## Kyrgyzstan



Telecom Regulator National Communications Agency (NCA) has pushed back the deadline for SIM card registration to February 1, 2016, citing

requests from inhabitants of remote areas who claim to be unable to easily access the service centers of mobile operators to complete the registration procedure. The NCA reported that 1,082,601 of the country's wireless subscribers (which totaled nearly eight million at the same date) were still unregistered as of September 30, 2015, one day ahead of the previously set deadline. Compulsory SIM registration was introduced under government decree No. 97 'On approval of rules for the provision of mobile telecommunication services', which entered into force on March 8, 2014; SIM card holders were expected to register their details within a year - i.e. by March 8, 2015 - or face disconnection. Due to the cellco's collective failure to meet the deadline, the timeframe was subsequently extended to August 8, then October 1, 2015. (October 1, 2015) [telegeography.com](#)

## Lithuania



Communications Regulatory Authority (RRT) has approved the procedure and conditions for its planned auction of spectrum in the 880MHz-915MHz and

925MHz-960MHz paired frequency ranges, as well as the 1710MHz-1785MHz and 1805MHz-1880MHz paired bands. Following the conclusion of a consultation with the public and industry stakeholders, the regulator has set a starting price of EUR10 million (US\$11.3 million) for each block of spectrum, which will go under the hammer on January 6, 2016. The country's three existing mobile network operators (MNOs) Omnitel, Tele2 and Bite Lithuania have the right to use the frequencies for wireless telephony and data services until October 31, 2017, and the new licenses will be valid from November 1, 2017 to October 31, 2032. (October 20, 2015) [telegeography.com](#)

## Malawi



The Malawi Communications Regulatory Authority (MACRA) has formally issued a ten-year public telecoms services license to Lacell Private Limited. Nyasa Times quotes the head of the MACRA, Godfrey Itaye, as saying that the licensing of a new mobile operator will increase competition, leading to lower prices and improved service quality. Lacell chairperson, Farook Satar, said the company will deliver high quality services and will provide coverage to rural parts of the country. Lacell will compete with established cellcos Airtel Malawi and Telekom Networks Malawi (TNM), which claimed subscriber bases of 3.39 million and 2.63 million, respectively, at the end of June 2015. Lacell and another company, Espresso Telecom Group, were selected as the winning bidders of two mobile concessions in April 2009, but following legal concerns that the MACRA had issued a pair of licenses but had only advertised one for sale, the government cancelled the process in October 2009. A new international tender was subsequently launched by the regulator in February 2010, and an operating concession was eventually awarded to Celcom Limited in May 2011. However, Celcom has not launched commercial services, having repeatedly failed to meet its rollout obligations, and earlier this year MACRA moved to revoke the locally-owned firm's concession.

(October 7, 2015) telegeography.com

## Malaysia



The Malaysian Communications and Multimedia Commission (MCMC) is targeting broadband access for 95% of Malaysians by 2020, with plans to offer speeds of up to 100Mbps to at least 50% of urban areas and 20% of rural locations. Additionally the government is reportedly seeking to offer cheaper broadband tariffs to consumers, with the majority of Malaysians currently subscribed to entry-level broadband plans. 'We may consider changing the entry-level package to a higher speed without any substantial increase in cost to maintain affordability and at the same time offer a higher speed,' commented MCMC Minister Datuk Seri Dr. Salleh Said Keruak, adding: 'I have asked my ministry to put special emphasis and to focus on infrastructure development to expand the internet penetration and coverage to all parts of Malaysia ... My ministry is now looking into the details.' As at end-June 2015 Malaysia had 2.906 million broadband subscriptions, representing a household penetration rate of 42.4%, with Telekom Malaysia having 78.7% of the market share in terms of subscribers and offering coverage to approximately 70% of households. (October 19, 2015) Bernama News

## Mexico



Mexican telecoms regulator IFT said earlier this week that it will force Telmex to offer competitors better terms as it seeks to open up its local network, part of an effort to increase competition in a sector dominated by billionaire Carlos Slim. The move will require Telmex, owned by Slim's America Movil, to modify the terms and conditions under which it will let other companies use part of its vast fixed line infrastructure. The so-called "last mile" connects competitors using Telmex's fixed line infrastructure with their end-user customers.

Once Telmex is formally notified of the decision, the company has 20 days to present a new plan, the Federal Telecommunications Institute (IFT) said in a statement. Since declaring America Movil dominant last year, the IFT has been introducing stricter measures designed to boost access to a sector seen as less competitive than Mexico's peers. America Movil operates around 70 percent of Mexico's mobile and fixed lines.

(October 13, 2015) telecomengine.com

Two of Mexico's fixed-line telecoms operators detailed a merger agreement that will enable them to compete more effectively in the market. Conglomerate Alfa has inked a deal that will see it combine its Alestra business services operator with fixed-line telco Axtel. Axtel will remain as an operating and publicly-traded holding company, Alfa said. It will issue new shares to be held by Alfa, giving it around 51% ownership of the combined company. The value of the deal was not disclosed. Together the two operators generate annual revenues of 11 billion pesos (€584 million) from enterprise customers and MXN4 billion from the consumer market. They have 37,500 km of backbone, metro and fiber network infrastructure and 6,000 square meters of data centre space. However, the pair has a long way to go before they will be able to seriously challenge dominant player Telmex, owned by America Movil. According to the latest data from regulator IFT, America Movil had a 62.5% share of Mexico's 20.9 million fixed lines at the end of the first quarter of 2015, while Axtel's market share came in at just 3.9% and Alestra formed part of the 'others' category that made up 1.4% of the market. As such, the merged entity will remain more than ten times smaller than the incumbent. "The merger between Alestra and Axtel enhances their competitive advantages and positions the company to continue to meet the growing demands of the Mexican telecom and IT markets," said Alfa president Alvaro Fernandez Garza, in a statement. He will become co-chairman of the board of the new entity, alongside Axtel chairman and CEO Tomas Milmo Santos. Rolando Zubiran, who currently serves as chief executive of Alestra, will take on the role of CEO of the merged entity, while Axtel CFO Felipe Canales will become finance chief. The deal is subject to various closing conditions, including regulatory approvals. The firms expect it to close by the end of this year or in early 2016. (October 2, 2015) totaltele.com

## Myanmar



Myanmar's Ayeyardwady Bank (AYA Bank) has contracted systems integrator NEX4 ICT Solutions to overhaul the financial service provider's IT infrastructure. The deployment includes using VMware products to virtualize AYA bank's data center and networking infrastructure to enable agility, flexibility and scalability, with the aim to better serve Myanmar's growing digital economy. Since its formation in 2011, AYA Bank has always prioritized its customers, with a strong belief in technology's role in ensuring long term sustainable growth, service delivery for its customers and community at large. Technology has been recognized as an enabler for businesses to innovate and be more productive particularly in today's digital age. The opening of Myanmar's economy has given rise to increased digitization of its economy, with mobile subscriptions expected to reach 38.5 million by end of 2019. With smartphones and connectivity,

speed and way of communicating and transacting like e-payment and mobile banking, are now possible. From banking, trading to payment services, AYA Bank's employees across the country create and manage high amounts of data ranging from customer information, financial records and more daily. With increasing growth in business, AYA Bank needed the ability to provision the necessary support to manage the rising data volumes at a cost-effective and efficient manner. "To better serve our customers in today's digital age, we are glad to partner with VMware in enhancing our ability to provide faster and more reliable services across our 124 branch offices in Myanmar. In a highly competitive industry where prompt and good customer service is critical, we saw IT as the driver in supporting our business, enhancing our customer service delivery, business productivity while ensuring security," Phy Aung, MD, AYA Bank.

(October 26, 2015) telecomasia.net

## New Zealand



The government of New Zealand has upped its target for nationwide broadband coverage, saying 99% of the population should have access to a connection offering speeds of at least 50Mbps by 2025, with the remaining 1% able to get speeds of at least 10Mbps. Under its previous plan, 97.8% of the population was being targeted with a minimum 5Mbps line. The government-backed Rural Broadband Initiative (RBI) and Ultra Fast Broadband (UFB) schemes are seeing operators deploy high speed wireless and fiber networks, with UFB concentrating on urban areas and RBI targeting more outlying regions. Communications Minister Amy Adams says: 'our use of, and reliance on, technology and broadband connectivity are increasing rapidly. It's vital that we set aspirational targets to ensure we keep up with this pace of change. This is about setting a vision of where we want New Zealand to be in ten years.' She added: 'We want to see all Kiwis, whether urban or rural, with access to the economic and social opportunities high-speed connectivity brings.'

(October 8, 2015) telegeography.com

## Niger



Niger is set to merge national state-owned telecoms operator Societe Nigerienne des Telecommunications (Sonitel) and its mobile arm SahelCom, in a bid to combat rising competition from the likes of international giants Bharti Airtel and Orange Group. Reuters cites Telecommunications Minister Abdou Mani as saying that the merger aims to streamline the two companies' technical and financial resources. He added that the government, which has invested XAF85 billion (US\$147 million) in Sonitel since 2012, will complete the deployment of the company's fiber-optic network and other new technologies to encourage privatization of the combined national carrier. In December 2001 a 51% stake in Sonitel was sold by the government to Dataport, a joint venture between Libyan Arab African Investment Company and China's ZTE. In February 2009, however, the government said it was renationalizing the stake held by Dataport, allegedly due to poor management and failure to meet the terms of the privatization agreement. In May 2011 – two months after a deal to sell a stake in the company to Libya's LAP Green Network was cancelled – Niger began looking for a new buyer for Sonitel, but in April 2012 parliament voted to keep Sonitel in government hands. (October 19, 2015) reuters.com

## Nigeria



The Nigerian Communications Commission (NCC) has abolished the minimum data price for all operators, in order to ensure the 'sustainability, growth and development' of the data service market. In a public notice published on its website, however, the watchdog warned that it would restore the data floor price if any distortion is observed within the market segment. Earlier this month the NCC also permitted 'small operators' – classed as an existing service provider or new entrant with a subscriber market share of less than 7.5% – and non-profit organizations to set their voice and data tariffs below the industry's retail floor price. The regulator imposed a retail floor price on the telecoms sector in May 2013, as a means of controlling anti-competitive behavior by operators deemed as having a dominant position within the market. (October 28, 2015) telegeography.com

MTN Nigeria has been fined US\$5.2 billion by Nigeria's Communications Commission (NCC). The report revealed that MTN was fined for non-compliance with a deadline set out by the NCC to disconnect all non-registered SIM cards. The move follows accusations by mobile phone users that the regulator had failed to bring operators to account for poor services to subscribers, the report revealed. According to the report, MTN Nigeria said it was studying the letter sent to it by the regulator and will respond as soon as possible. A senior official of the company said it was in talks with the regulator over the fine and hoped to resolve the matter. The report further revealed that some Nigerians said that they wanted the regulator to address poor network signals provided by telecoms companies in the country. Additionally, they want more sanctions on firms to encourage them to improve signals and the quality of service in the country. Statistics from the NCC indicates that Nigeria, a country with estimated population of more than 170 million, has close to 150 million mobile phones. According to timeslive.co.za, shares in MTN extended their losses to more than 10 percent and traded down 9.3 percent lower at 173 rand by 1236 GMT (14:36 SA time).

(October 26, 2015) itnewsafrika.com

The Nigerian Communications Commission (NCC) said it has withdrawn the "data floor price" for operators in the telecommunications industry. "Floor price" is a government or group-imposed price control or the limit a price can be charged for a product to check unhealthy rivalry among players. In a statement in Lagos, the commission said that the withdrawal was in a bid to ensure sustainability, growth and development of the data service market segment. "However, the commission will restore the floor price if any distortion is observed within the market segment," it said. NAN reports that with the withdrawal of the price, telecommunications industry now has the permission of NCC to charge subscribers lower than the set lowest industry prices. The regulatory body had in May 2013 imposed a price floor on telecommunications operators in the country as a means of controlling anti-competitive behaviors by operators considered to have attained the dominant status in the industry. Such anti-competitive behaviors include charging calls within their networks much lower than what they charged for calls terminating on other networks. With this, the operators might just be setting up calling clubs – a practice where subscribers just call those within the network of their own service providers.

(October 26, 2015) vanguardngr.com

## Norway



Norwegian telecoms regulator the National Communications Authority (Nkom) has published the final conditions for the upcoming auction for technology-neutral authorizations in the 900MHz frequency band, following a public consultation in June 2015. The regulator is aiming to sell two blocks of 20MHz spectrum (divided in four blocks of 2x5MHz) in the 880MHz-915MHz/925MHz-960MHz bands in a multi-round open auction in the summer of 2016, with a minimum set price of NOK140 million (US\$18.27 million) per block. The 15-year concessions will offer nationwide coverage (excluding the Norwegian dependencies of Jan Mayen and Svalbard, and other territories with special status). The spectrum will become available from January 1, 2018, with the frequencies to be freed up as a result of the expiry of licenses held by NetCom (TeliaSonera) and Telenor Norge. (October 20, 2015) [telegeography.com](#)

## Paraguay



The National Telecommunications Council (Consejo Nacional de Telecomunicaciones, Conatel) has released the final bidding terms and conditions for the country's planned 2100MHz/1700MHz AWS spectrum auction, which will allow participating cellcos to introduce 4G LTE technology. Twelve paired 2x5MHz sub-bands will be made available, while the maximum spectrum allowance each carrier can be assigned has been set at 30MHz. The minimum bidding price for a sub-band has been set at USD15 million. Interested parties have until 3 December to file applications for the tender, with the bids due to opened later that same day. (October 16, 2015) [telegeography.com](#)

## Poland



Poland's Office of Electronic Communications (UKE) has released the full results of the 4G spectrum auction which ended last week, with Orange Polska emerging as the highest bidder. It paid a total of PLN3.17 billion (USD859 million) for two 5MHz blocks of paired frequencies in the 800MHz band and three blocks of 2x5MHz at 2600MHz. The three other 800MHz packets on offer were won by new entrant NetNet (PLN2.05 billion), plus existing cellcos T-Mobile Poland (PLN2.02 billion) and P4/Play (PLN1.50 billion). The other incumbent mobile operator, Polkomtel, had already pulled out of the 800MHz bidding, saying it would be better if operators collaborated on the rollout of one or perhaps two nationwide 4G LTE networks to avoid duplicating infrastructure, but it did pay a total of PLN155.8 million for four 2x5MHz blocks in the 2600MHz band. The remaining tranches of 2600MHz spectrum were won by T-Mobile (PLN115.8 million for three blocks) and P4 (PLN222.4 million for four blocks). Orange was the only one of the incumbent operators without any 800MHz/2600MHz 4G spectrum prior to the sale (although it offers LTE via 1800MHz spectrum), so had always been expected to be the highest bidder. A sixth company, Hubb Investments, pre-qualified for the auction when it began back in February, but failed to participate in the bidding. (October 20, 2015) [telegeography.com](#)

Poland's long-running 4G auction finally came to an end, raising PLN9.23 billion (\$2.5 billion) in bids, six times the initial target set by regulator UKE. UKE will reveal the final results of the auction, which began back in February, in

the coming days. The country's four operators were vying for 4G spectrum, including Orange, Deutsche Telekom, Polkomtel's Plus and Play (P4). Early reports suggest P4, which was recently put up for sale by its Greek owners Olympia Development, has won one 800MHz block and four blocks of 2.6GHz frequencies. P4 and Plus already have access to some 4G frequencies, giving them a head start on rivals Orange and Deutsche Telekom. Up for grabs in the auction was five 800MHz blocks, as well as 14 blocks of 2.6GHz, with each bidder restricted to no more than two 800MHz blocks and four blocks of 2.6GHz. The conclusion of the lengthy process will indeed come as a relief to UKE, after its head Magdalena Gaj questioned whether the "market is serious about buying frequencies" following more than 400 rounds of bidding in September. As prices continued to hike up, way past the PLN1.6 billion originally set by regulators, the government intervened and proposed a deadline to end the process after 115 auction days, which was approved last month. The proposal was however met with staunch opposition. The country's operators, mainly P4 and Plus, argued against a change in rules mid-way through the process, with the former threatening legal action. Under Polish law, when the auction started the process could only end once bidding ceased. According to analysts, the high auction price could impact the price for phone services for users, as well as weigh on profitability for the operators. Market leader Orange Polska was also seen as most under pressure to secure the spectrum. (October 16, 2015) [mobileworldlive.com](#)

Country's fourth largest mobile operator P4, which trades under the 'Play' brand, is to be put up for sale next year by its current owners, investment funds Tollerton and Novator. The deal could be valued at up to PLN7.5 billion (US\$2 billion), and is expected to take place by mid-2016. Greece-based Tollerton, which is itself a subsidiary of Olympia Development, holds 50.3% of P4, while Icelandic firm Novator controls the remaining 49.7% stake. Sources are suggesting that European operators such as Telenor or TeliaSonera could see P4 as a platform to enter the Polish market, while the cellco has in the past been linked as a possible target for domestic fixed line operator Netia. P4's owners recently threatened legal action against the government should the ongoing sale of 4G wireless spectrum be brought to an early conclusion; P4 is one of six companies bidding for 4G frequencies in the 800MHz and 2600MHz bands. (October 7, 2015) [reuters.com](#)

## Romania



Orange, Vodafone and quad-player RCS & RDS were among the biggest spenders in Romania's re-auction of 3.4 GHz and 3.8 GHz licenses, which concluded this week, raising €10.1 million. 2K Telecom and state-owned broadcaster Radiocom also picked up spectrum during the auction, which raised less than the Romanian National Authority for Management and Regulation in Communications (ANCOM) had in mind. Orange spent the most, bidding €3.9 million for five 2x5 MHz blocks of 3.4 GHz spectrum and nine unpaired 5 MHz blocks of 3.8 GHz spectrum. RCS & RDS snapped up 10 lots of 3.8 GHz spectrum for €1.9 million, while Vodafone won four blocks of 3.4 GHz spectrum for €1.7 million. Radiocom lodged bids totaling €1.9 million and was awarded 10 blocks of 3.8 GHz frequencies, while 2K Telecom won a more modest two blocks of paired 3.4 GHz spectrum for €740,100. "The license fees, reaching

a total of €10,124,101, are to be paid by 2 December 2015, and the new rights of use of the radio spectrum will enter into force on January 1, 2016, for a 10-year period," said ANCOM, in a statement on Tuesday. The sum raised is below the €12.8 million reserve proposed by ANCOM in July because some frequencies were left on the shelf. 255 MHz of spectrum was assigned in total, comprised of 11 lots of 2x5 MHz blocks of spectrum in the 3.4 GHz-3.6 GHz band, and 29 lots of unpaired 5 MHz blocks of spectrum in the 3.6 GHz-3.8 GHz band. Five lots of paired spectrum and seven lots of unpaired spectrum did not attract bidders. (October 28, 2015) totaltele.com

After analyzing the initial offers submitted by the five applicants in the tender for wireless broadband licenses in the 3410MHz-3600MHz and 3600MHz-3800MHz spectrum bands, Romanian regulator the National Authority for Management & Regulations (ANCOM) has decided that each operator will be awarded their initial requested number of blocks, as demand did not exceed supply. This week ANCOM is holding additional bidding rounds for the remainder of the frequencies up for grabs, whilst applicants may also bid for their preferred bandwidth allocations. The five provisional licensees are: Vodafone Romania, Orange Romania, 2K Telecom, RCS&RDS (Digi) and Radiocom (SNR).

(October 20, 2015) telegeography.com

Orange Romania, Vodafone Romania, RCS&RDS (Digi), National Radiocommunications Company (SNR) and 2K Telecom submitted offers for 3400MHz-3800MHz wireless broadband licenses by the deadline of October 5. The ten-year nationwide licenses will be valid from January 1, 2016. Current license holders in the band are Orange Romania, UPC Romania, Vodafone Romania, 2K Telecom and SNR, under concessions expiring at end-2015. UPC apparently decided not to renew its wireless broadband spectrum. If demand exceeds the available resources, an auction for the frequencies will start on October 26. (October 7, 2015) hotnews.ro

## Senegal



Senegal's telecoms regulator Autorite de Regulation des Telecoms et des Postes (ARTP) has given the country's three mobile operators, Orange Senegal, Tigo Senegal and Sudatel Senegal (Expresso), a 60-day extension on the deadline for ensuring that all their customers have provided the necessary personal identification information under the watchdog's mandatory SIM registration program. Under Decree No. 2007-937, all users are required to comply with new rules confirming their identity, but the ARTP has extended the deadline from October 1, 2015 to December 1, 2015 allow the last of the 'offenders' to comply before switching off their service. In June 2013 the Ministry of Communication, Telecommunications and Digital Economy launched a scheme to identify all mobile subscribers in the country. The project, managed by the ARTP, is being carried out under recommendations laid out by the International Telecommunication Union (ITU) – adopted in 2007 – that require domestic cellcos to identify who is using their mobile services in order to provide more reliable statistics on the market improve security and tackle the grey market for phones. Eight years after adopting the decree, Senegal's wireless service providers have so far failed to complete the mobile identification scheme,

despite the trio deploying teams across the country to help complete the process. (October 13, 2015) telegeography.com

The incumbent fixed and mobile operator Sonatel has received an official warning from industry watchdog ARTP over a string of network outages that caused major service disruptions last month. On 30 September ARTP rapped the telco over repeated network failures on September 15, 18 and 26. Sonatel, which is 51%-owned by Orange Group, experienced signal failures across its mobile system that prompted a wave of complaints from customers. ARTP has officially reminded the operator of its contractual obligations under Articles 7, 26 and 139 of Law No. 2011-01 of February 24, 2011 relating to Senegal's telecommunications code, which includes the obligation to ensure continuity of operation of networks and services 'operating continuously, round the clock, including weekends and holidays'. Sonatel could face fines if it fails to redress the problems on its network.

(October 2, 2015) telegeography.com

## Taiwan



A row is brewing in Singapore over Telecoms regulator the National Communications Commission (NCC) has once again rejected an application for a merger between Ambit Microsystems and Asia Pacific Telecom (APT), according to the Taipei Times. An earlier merger application was rejected in January 2015 on the grounds that it had not adequately explained the scope of a strategic alliance with another of Taiwan's cellular operators, Taiwan Mobile, which holds shares in Ambit. In this latest development the link between Ambit, APT and Taiwan Mobile has again caused concern for the NCC. Regulatory spokesperson Yu Hsiao-cheng noted that, with Taiwan Mobile having raised its stake in Ambit via the acquisition of 14.99% of the latter's shares, the merger of APT and Ambit would lead to Taiwan Mobile having a 3.45% holding in the post-merger firm. According to the Telecommunications Act, Taiwan Mobile should file an additional application regarding its investment in the new company, which must be approved by the NCC. Separately, Taiwan Mobile and APT will each be required to submit individual plans to address breaches of telecoms regulations linked to a 4G roaming agreement under which the two firms would share a core network; such a setup, the NCC has ruled, does not actually meet the definition of a roaming agreement. According to Yu, the Commission will only review the merger once it has received all the relevant documentation. For its part, APT has said it will make a renewed merger application as soon as possible after examining the NCC's requests, while it will also submit a plan to address the issue of its use of the core network.

(October 5, 2015) telegeography.com

## Thailand



Thailand's National Broadcasting and Telecommunications Commission (NBTC) has given state-owned telco TOT the green light to develop 4G LTE services using its existing 2300MHz-2400MHz spectrum for the next ten years. The strategy will help TOT create new revenue streams to offset lost build-transfer-operate (BTO) concession revenues, the NBTC's secretary-general Takorn Tantasith claimed, after the watchdog's telecom committee approved TOT's 4G proposal on Thursday. Mr.

Takorn added that TOT is permitted to develop 60MHz of bandwidth for commercial 4G services nationwide (out of a 64MHz block held by TOT – 4MHz being of limited technical usefulness). The frequency range has previously been partly utilized for public telephony services and transmission links. 'TOT will have the right to use the 2400MHz spectrum to operate wireless broadband service until 2025 without an operating license,' confirmed Takorn. In March 2012 the NBTC indicated (without confirming) that it would grant TOT permission to continue using certain existing wireless frequencies which are not covered by licenses, and whilst awaiting final regulatory approval TOT has held trials of Time Division (TD)-LTE 2300MHz services, including a partnership project with cellular market leader Advanced Info Services (AIS) in H1 2012. It has recently been reported that the regulator and government are looking to appease TOT with incentives including concessions and loans to avoid the telco carrying out its threat to launch court action against next month's 900MHz license auction, which involves the reallocation of frequencies originally issued by TOT to AIS under a build-transfer-operate (BTO) agreement which expired in September. (October 30, 2015) the Bangkok Post

Cat Telecom plans to ask the National Broadcasting and Telecommunications Commission again to consider permitting it to upgrade its idle 20 megahertz of bandwidth on the 1,800MHz spectrum to provide fourth-generation wireless broadband service, said CAT's acting chief executive officer, Colonel Sanpachai Huvanandana. The NBTC recently declined its request on the upgrade pending CAT's obtaining consent from Total Access Communication (DTAC) first. CAT has granted 50MHz of the 1,800MHz spectrum to DTAC, which currently uses only 25MHz. Of the remaining idle bandwidth, 5MHz was been allocated to the NBTC for reallocation by auction. CAT's plan to ask again for the spectrum upgrade follows last week's decision by the NBTC telecom committee to consider allowing TOT to upgrade its bandwidth on the 2.3-gigahertz spectrum to provide 4G service, pending TOT's submission of a related business plan. Sanpachai said CAT needed to upgrade and use the idle bandwidth as part of its plan to use the spectrum efficiently. "We plan to be a 4G network provider. We're looking at wholesaling 4G bandwidth to our MVNOs [mobile virtual network operators], which might want to offer 4G as well as 3G service," he said. Sanpachai said that besides providing cloud services and a submarine cable network service, CAT needed to provide 4G service in order to serve the government's "digital economy" policy. Besides the 1,800MHz spectrum, CAT holds 15MHz on the 850MHz spectrum, on which it provides 3G service jointly with True Group. Its rights to the 850MHz spectrum will expire in 2025, while that for 1,800MHz will end in 2018. CAT is preparing to present to the Information and Communications Technology Ministry its plan to set up a joint venture with DTAC to run telecom towers under a concession contract. The CAT board has approved it and is waiting for the State Enterprise Policy Commission to consider it. (October 19, 2015) nationmultimedia.com

All four telecom companies that picked up bid documents for two licenses on the 1,800-megahertz spectrum have been pre-qualified, the National Broadcasting and Telecommunications Commission said. They are Advanced Wireless Network of Advanced Info Service, DTAC TriNet Network of Total Access Communication, True Move H Universal Communication of True Corp and Jas Mobile of Jasmine International. The minimum

starting bid will be Bt15.912 billion per license, since there are more than two bidders, according to the NBTC's auction rules. "If the four compete seriously in the bidding, each license is expected to fetch more than Bt20 billion," an NBTC source said. The auction will be held on November 11. The telecom committee is also expected at its Tuesday meeting to finalize the date for auctioning two licenses for the 900MHz spectrum. The tentative date is December 15, but the NBTC is expected to move it up to next month. However, TOT has considered mounting a legal challenge against the NBTC's plan to reclaim this 900MHz spectrum for auction. TOT granted a 900MHz concession to Advanced Info Service. It expired on September 30. The state enterprise wants to keep the spectrum until 2025. (October 11, 2015) nationmultimedia.com

Thai telecoms start-up venture Mobile LTE is the fifth company to acquire bidding documents for the planned auction of two 900MHz 4G licenses in Thailand, which is scheduled to take place in December this year. Each would-be participant must pay a 'bidding fee' of THB500,000 (US\$13,746), plus a deposit guarantee worth 5% of the reserve price; which for a 900MHz license is THB12.9 billion, or 80% of the estimated real spectrum value. Documents will be made available to potential bidders until October 21. Earlier this month the first four potential bidders in the 900MHz auction were named as cellular market leader Advanced Info Service (AIS); second-placed celco Digital Total Access Communication (DTAC); third largest mobile provider True Corp (True Move H); and Jas Mobile Broadband (a subsidiary of Jasmine International, parent of Thai fixed network operator Triple T Broadband). All four companies previously acquired bidding documents for the government's 1800MHz auction, which will take place in November. Mobile LTE is a consortium of local ICT and oil trading firms. Advanced Information Technology (AIT) holds a 20% stake in Mobile LTE, which is also one of the shortlisted firms aiming to partner struggling state-run Thai telco TOT in the 4G mobile sector.

(October 7, 2015) Bangkok Post

## Tonga



The national Parliament has taken steps to control internet access in the country, rushing two new communications bills through that will set up a new regulatory body with powers to block selected content for internet users, along with other measures that critics argue could infringe individual rights. The two new bills have been proposed by the Minister for Communication Siaso Sovaleno who says that they are vital for the development of the country's communication industry. The minister said that the existing telecoms legislation, the Communication Act 2000, was becoming outdated and needed amending in order to deal with advancements in modern communications technology. As such, the third reading of the two bills was carried unanimously by the House on 6 October, enabling the new Communication Bill 2015 to be adopted, and ultimately the establishment of the new independent regulator. (October 12, 2015) teleogeography.com

## United Kingdom



Having examined the likely impact of the proposed acquisition of British mobile network operator EE by local fixed line incumbent BT, the Competition and Markets Authority (CMA) has provisionally given the green light to the deal. The competition watchdog said that it had reached its initial decision after studying how the tie-up would affect competition in a number of different areas of the telecoms sector, while also looking at how the merger might affect competition for services to consumers which both companies currently provide. Stating that it does not believe the merger of BT and EE would result in a 'substantial lessening of competition (SLC) in any market in the UK'; the CMA's full provisional findings report will be published later this week. One initial detail that has been revealed is that, with the inquiry group having considered ten areas of concern (or theories of harm) outlined in an issues statement published in July, it was unanimous in provisionally finding no SLC in relation to all but one of the markets reviewed. In relation to the wholesale mobile market, however, the group was said to have been evenly divided over whether the concerns it investigated gave rise to an SLC. Commenting on the decision, John Wotton, Inquiry Chair, was cited as saying: 'We provisionally think that the retail mobile market in the UK, with four main mobile providers and a substantial number of smaller operators, is competitive. As BT is a smaller operator in mobile, it is unlikely that the merger will have a significant effect on competition. By the same token, it is unlikely that the merger will have a significant effect on competition in the retail broadband market, where EE is only a minor player.' In announcing its provision decision, the CMA confirmed that it had extended the deadline for its final report by eight weeks, to January 18, 2016, to allow it to consider all responses to the provisional findings in detail before finalizing and publishing its decision.

(October 28, 2015) telegeography.com

UK telecoms regulator OFCOM has unveiled details of its planned spectrum auction due to take place early next year. A total of 190MHz of high-capacity spectrum will be offered across the 2.3GHz and 3.4GHz bands as part of a wider Government initiative to free up public sector spectrum – made available by the Ministry of Defense – for civil uses. OFCOM noted that the frequencies are 'particularly suited for high-speed mobile broadband services, because they can carry large amounts of data'. The regulator also revealed that a reserve price would be set at GBP70 million (US\$107 million), with no cap on the amount of spectrum any one company can acquire. OFCOM highlighted that limits could prevent a bidder from buying large blocks of adjacent spectrum – which have the potential to support very fast download speeds and could potentially pave the way for 5G. With OFCOM also saying it aims to ensure that the auction is 'designed to be fair and transparent', it will offer the 2.3GHz frequencies in 10MHz lots, while spectrum in the 3.4GHz band will be offered in 5MHz lots. Commenting on the plans, Philip Marnick, OFCOM Spectrum Group Director was cited as saying: 'Spectrum is the essential resource which fuels the UK's wireless economy. This auction is an important step in ensuring that the UK has the wireless capability to deliver and support new technology ... We're responding to rapid change and innovation in the communications sector, which is placing greater demands on spectrum. Part of our plan to meet this demand is by making new spectrum available and allowing it to be used in a number of different ways.'

(October 27, 2015) telegeography.com

OFCOM confirmed that it will go ahead with plans to auction off spectrum in the 2.3 GHz and 3.4 GHz bands early next year, setting a reserve price of £70 million (€97 million) for the airwaves. The U.K. regulator did not set a firm date for the process, other than to say that the auction "is planned to take place in early 2016." Participants will be able to bid for a total of 190 MHz of spectrum, 40 MHz in the 2.3 GHz band and 150 MHz in the 3.4 GHz band. Earlier this year OFCOM mulled holding some 60 MHz in reserve for sale at a later date, due to the potential impact on the market of ongoing operator consolidation, but it has elected to auction off the entire spectrum at once. The spectrum has been made available by the Ministry of Defense as part of a broader government initiative to free up spectrum for civil uses. There is no cap on the amount of spectrum any one operator can acquire since large blocks have the potential to support fast download speeds, the regulator said. It will split the 2.3 GHz band into 10-MHz lots, setting a reserve price of £10 million per block. The 3.4 GHz band will be divided into 5-MHz lots each carrying a minimum price of £1 million. "This auction is an important step in ensuring that the UK has the wireless capability to deliver and support new technology," said Philip Marnick, OFCOM's spectrum group director. "We're responding to rapid change and innovation in the communications sector, which is placing greater demands on spectrum," he said. "Part of our plan to meet this demand is by making new spectrum available and allowing it to be used in a number of different ways." OFCOM said the spectrum in question will be suitable for mobile broadband services, including 4G. It noted that the 2.3 GHz band is already being used for 4G services in 10 markets outside of the European Union, including China, India and Australia. TD-LTE services have been particularly successful in China, thanks to support from China Mobile, which had 247.62 million 4G customers using the technology as of the end of September. Major smartphone brands also support the 2.3 GHz band. The 3.4 GHz band is being used for 4G wireless broadband in six countries including the UK, Canada and Spain, OFCOM added. UK Broadband uses 3.4 GHz spectrum for its Relish wireless broadband service in London.

(October 26, 2015) totaltele.com

## United States



The US Federal Communications Commission (FCC) proposed new rules to "unlock the mobile broadband and unlicensed potential of spectrum at the frontier above 24GHz". It wants to make 28GHz, 37GHz, 39GHz, and 64-71GHz bands available using schemes like "traditional wide area licensing, unlicensed, and a shared approach that provides access for local area and wide area networks." It said the rules would create a regulatory environment in which next-generation mobile technologies can take hold. It was previously assumed physical and tech limitations could not support mobile service in these bands, it said in a statement. However, now it believes new developments may allow the use of these high frequencies for mobile applications like 5G service, "with significantly more capacity and faster speeds for next generation mobile service." The proposition also provides a path for a variety of platforms and uses, including satellite, to coexist and expand through market-based mechanisms. The FCC is seeking comment on the service, licensing, and technical rules for facilitating flexible use in these bands as well as on other bands above 24 GHz that may be considered in the future. "By taking this action now, the commission begins to establish a framework to proceed in parallel

with technological development in order to keep pace and help future mobile and other wireless technologies flourish," it said. (October 23, 2015) [mobileworldlive.com](http://mobileworldlive.com)

The U.S. Federal Communications Commission on Friday released opening bid prices for its airwaves auction in a public notice and also set the dates for broadcasters to file applications for the auction. "For all practical purposes, we've fired the starting gun: the release of final opening bid prices - combined with the detailed application procedures and other data released provides broadcasters with all of the information they need to decide whether to apply to participate in the auction," FCC Chairman Tom Wheeler said in a statement. Applications to participate in the reverse auction must be filed between December 1 and December 18, according to the notice, which said that late filings would not be accepted. Broadcasters must commit to a preferred initial bid option by March 29, as well. A senior FCC official, briefing reporters on condition of anonymity, said the whole process will likely close in the second or third quarter of 2016. According to the notice, the highest opening price in the auction is \$900 million, which would go to WCBS-TV in New York.

(October 19, 2015) [telecomengine.com](http://telecomengine.com)

FCC commissioner Mignon Clyburn said she is "not happy" about the lack of universal mobile broadband service across the US, insisting that "far too many people in rural America" have been denied access for too long. Speaking in the day two keynotes at the US Competitive Carriers Association's (CCA) annual convention, Clyburn called for the adoption of a permanent mobility fund in the country, which she believes will address some of the problems facing a large group of US consumers that still lack access to internet services. She said the commission decided on establishing such a fund in 2011, before "funding froze at 60 per cent of 2011 support levels". "Now is the time for the commission to ensure that funding to mobile providers extracts the most value for each dollar of each universal fund spent," Clyburn said. "Now is the time for consumers in those underserved areas to have what most of us take for granted." Clyburn revealed the CCA, which represents the interests of more than 100 small wireless providers in the US, had called on the FCC to increase funding to providers, "so that the mobility fund could reflect the true state of mobile broadband deployment, which is far more limited than the commission assumes, and doesn't represent the essential nature of mobile broadband". During the speech, Clyburn cited a study that suggested almost 10 per cent of all Americans use only their mobile phones to access the internet. She said the evolution of the industry meant the same rules should now be applied to both fixed and mobile services. "Users of mobile services should no longer be relegated to a second class mobile experience. They need and deserve a robust experience on par with their wireless peers," she said. Clyburn's FCC colleague, commissioner Michael O'Reilly, who opened CCA's annual meet up with a keynote of his own on day one of the event, echoed Clyburn's views on underserved areas, and insisted infrastructure deployment was becoming ever more essential. "In the near term, wireless providers must install thousands of new facilities to provide service, meet capacity needs, relieve congestion and expand coverage areas," he said. "This will also help smaller providers in bringing connectivity to underserved areas, as they will also benefit from facility sharing." (October 9, 2015) [mobileworldlive.com](http://mobileworldlive.com)

The U.S. Federal Communications Commission (FCC) will retain US\$3.4 billion worth of mobile spectrum licences acquired by Dish Network in the AWS-3 auction earlier this year, and have imposed a financial penalty on the satellite TV operator for its failure to pay in full for those licenses. Dish won a significant amount of spectrum - racking up a bill of \$13.3 billion - in January's AWS-3 auction, but drew controversy by exploiting a loophole in the rules designed to help small players. It bid via three smaller subsidiaries, two of which - Northstar Wireless and SNR Wireless - won frequencies. Under the FCC's designated entity (DE) rules, the pair both qualified for a 25% small business discount on the airwaves, reducing the overall bill by \$3.3 billion. In August the FCC ruled that Dish is not entitled to those discounts. This week Dish announced that the FCC will retain \$2.2 billion worth of the spectrum won by Northstar and \$1.2 billion of that secured by SNR, leaving the pair paying \$5.62 billion and \$4.27 billion respectively for airwaves. "Dish and the entities in which it has invested are expected to have an average of approximately 75 MHz of spectrum nationwide," the satellite operator said. "The eligibility of Northstar Wireless, SNR Wireless and their investors (including Dish) to participate in future auctions, including any re-auction of the AWS-3 licenses retained by the FCC, is not affected," Dish added. Dish said it has loaned Northstar and SNR \$413 million to pay the penalty imposed on them by the FCC for defaulting on payments for the retained licenses. The companies could have more to pay, depending on how the FCC fares in any future attempt to re-auction the licenses. According to Reuters, which cited an unnamed FCC official, the regulator will seek to re-auction the licenses, which number 197 in total, after it concludes its so-called incentive auction - the sale of 600 MHz frequencies currently held by broadcasters - next year. Should the re-auction raise less than Northstar and SNR agreed to pay first time around, the two affiliates would be on the hook to pay the balance, the newswire explained.

(October 6, 2015) [totaltele.com](http://totaltele.com)

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(October 2, 2015) totaltele.com

## Uruguay



The Government ordered its revenue entity to study the way to start charging taxes to OTT platforms such as Netflix and Spotify as an answer to the request made by the Uruguayan National Broadcasters Association (Andebu). Andebu gathers all TV channels and Cable TV operators and had demanded the Government to take action in taxing the multimedia services offered by Netflix, particularly, but to the rest of the foreign companies operating in that country as well. "It doesn't make any sense that channels and Cable TV operators should pay their taxes and that Netflix shouldn't pay anything. In other countries they are already paying", said the President of Andebu, Pedro Abuchalja, in an article published some days ago in the El Pais journal. Netflix is available in Uruguay since September 2011.

(October 6, 2015) nextvlatam.com

## Zimbabwe



The government could assume US\$322 million of debt from state-owned fixed line and broadband operator TelOne, in a move designed to improve the telco's position with regard to securing additional financing. TelOne inherited loans totaling approximately US\$330 million when it was spun off from the former Postal and Telecommunications Corporation (PTC) in 2000. Media quotes a company statement which says the removal of the debt from the balance sheet would allow the company to access loans at reasonable rates. A bill for the assumption of the debt would need to be tabled in parliament. TelOne recently reported a 9% year-on-year fall in revenues for the six months to June 30, 2015 to US\$69 million. (October 5, 2015) The Zimbabwe Independent

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## ▼ WHOLESALE NEWS

### WHOLESALE UPDATES

#### Europe finally abolishes mobile phone roaming charges

Members of the European parliament have voted through new rules that will scrap mobile roaming charges and stop holidaymakers returning home to the nightmare of a massive phone bill racked up on their travels. The vote sees the deal reached between European authorities in June to scrap increased costs for calls, text and data while roaming with the EU, passed into law. UK mobile phone users who travel within Europe will only have to pay the same prices as they would at home, curbing the cost of continued mobile connectivity while abroad. Former vice-president of the European Commission and rapporteur for the Trade in Services Agreement, Viviane Reding said: "After 10 years of tireless fight, roaming is over. A victory for consumers and a stepping stone towards a truly European digital single market." Liberal Democrat MEP Catherine Bearder said: "The end of rip-off

roaming fees is a massive win for British consumers. Driving down costs and making it easier to travel is what being in the EU is all about. "This shows what we can achieve when Britain plays a leading role in Europe." The news was welcomed by campaigners, though some were cautious over some clauses that might limit the agreement's utility for all. Monique Goyens, director general of the European Consumer Organization said: "Another cost cut for mobile use abroad by April 2016 is good news, but is still only a half-baked solution. "Allowing companies to limit roaming rights for frequent travelers, for example, is certainly not the promised end of roaming in Europe. A real zero-roaming Europe hinges on a major telecom market reform, which is a mammoth task to achieve in just 13 months." The



vote followed more than two years of negotiations and U-turns as the European parliament butted heads with EU member states concerned about the financial impact on their national telecoms groups. The anti-roaming plans had been scheduled for the end of 2015, but were blocked in March by ministers of national governments through the European council. The roaming plans were twinned with a vote over amendment to telecoms regulation that would have reinforced European net neutrality, the principle that internet service providers should not give preferential treatment to certain websites and services. The amendments were rejected, leading to criticism by net neutrality campaigners. The commission is saying the new amendments to the telecoms market will be an end to "huge telephone bills ruining your holiday budget". This year, phone operators can still charge travelers to European member states up to 19 cents (14p) a minute for outgoing calls, five cents for incoming calls, six cents per text message, and 20 cents per megabyte of data downloaded, on top of their normal tariff. In April next year those costs will be reduced to five cents per minute, two cents per SMS and five cents per MB. Roaming charges will not be completely removed until June 2017 and will require reform of the roaming wholesale market on which national phone operators across Europe trade services between each other. It is this trade that allows UK mobile phone users to make calls, send texts and access data using European networks while in countries such as Germany, Spain or France. Some UK mobile operators have come out ahead of the roaming changes; others have stuck steadfastly to increased charges that can see bills of hundreds of pounds for holidaymaker usage that would not seem out of the ordinary in the UK. Some operators, including Vodafone UK, added daily charges to user bills for use of their allowance in European countries. Others, including Hong Kong conglomerate Hutchison Whampoa's Three UK mobile, removed roaming charges for those travelling to a selection of European countries, mirroring the end goal for the newly passed legislation. Kester Mann, mobile operators analyst with CCS Insight, said: "A number of providers have opted to offer inclusive roaming in many tariffs. This is a smart and differentiating

move given that has resonated well with customers – Three's Feel at Home service has saved customers £1.3bn in roaming charges and has been used by over 2 million customers." Ernest Doku from Uswitch said: "Bill shock from holidaying in the EU affects more than 9 million UK mobile users a year according to our research." One-fifth of UK mobile users travelling to the EU in the last year have faced higher than usual bills for usage, collectively amounting to £573m, according to data from Uswitch. The average charge added to bills was £61 on top of a user's standard contract charge, while 17% faced bills of £100 or more. While consumers may welcome the news, some have seen the moves to cut premiums for roaming as potentially damaging to the operation of mobile operators, removing a lucrative revenue stream. Others see the moves as opening new routes for revenue potential from increased overseas mobile use. Mann said: "European operators have seen roaming revenue fall rapidly over the past few years following implications of legislation from Brussels. The fall in roaming revenue for operators is sharpening their focus on new areas such as machine-to-machine connections and vertical segments. "There may be a temptation for operators to raise roaming charges outside the EU to compensate for the decline in revenue in the Union." Jennifer Kyriakakis, co-founder of telecom systems provider Matrixx said: "The fact is that most customers – approximately 90% – don't use their mobile devices while they're abroad, especially for data services, and when they do they reluctantly pay a premium for it. "With more subscribers using their phones abroad ... operators could have a much larger revenue stream that's both predictable and sustainable, while simultaneously driving customer loyalty instead of driving them away." The abolishment of roaming charges was not met with universal approval. In the days before the vote Roger Helmer MEP tabled an amendment to reject the agreement on behalf of Ukip. Helmer said: "Lower prices for jet-setters will mean higher domestic prices. The EU plan is good for MEPs, bad for voters." The next step for regulators is a reform of the roaming wholesale market, which has potential to further delay the process of roaming charge removal beyond June 2017, should talks drag. Once

agreements are in place, it could take the European mobile phone operator market one step closer to being free of its current geographic restrictions. Mark Windle, head of marketing for telecoms software provider OpenCloud said: "Most mobile network operators are limited to a market defined by their own radio-access network – services are defined by, and delivered from, individual service-siloes in each country – but service provision is capable of being pan-European, if not global. "The change in roaming charges may flatten the EU for travelers, the creation of a single communications market is not yet in place. But it is coming."

## MVNO EUROPE IS COMMITTED TO THE EFFECTIVE END OF ROAMING CHARGES

The European Parliament plenary ratified the political agreement to abolish retail roaming charges by June 2017. MVNO Europe, representing innovative virtual mobile operators in Europe, welcomes this vote but will remain very attentive to the revision of the wholesale market included in the text, as we believe is a precondition to an effective roaming-free Europe. After more than two years of intense negotiations, the EU institutions finally agreed to the end of retail mobile roaming surcharges in the European Union by 15 June 2017. Until this date, a transitional regime will be put in place on the 30th of April 2016 allowing operators to apply a surcharge capped at €0.05 per minute, €0.02 per SMS and data use at €0.05 per megabyte. However, the battle isn't over yet. The foreseen end of roaming is dependent on the completion of a review, by the European Commission; of the regulated wholesale roaming market (the price operators pay each other to use their respective networks). Without any further reduction of wholesale regulated roaming prices, in particular for data, MVNOs – but also smaller MNO operators – will have to pay overpriced wholesale roaming charges to visited mobile operators in order to offer roaming services to their consumers in Europe, thus making it impossible for them to remain competitive on their domestic markets. Due to a structural absence of bargaining power, MVNOs are usually

required to pay maximum rates when striking deals with MNOs on providing roaming access to their customers. Yet, smaller and more agile players such as MVNOs have been always more competitive in terms of prices as well as first-movers in innovative offers to European consumers (e.g.: multi-numbers SIMs, niche markets or fixed/mobile integrated offers, IoT/M2M, sophisticated m-payment solutions based on NFC, multiple sourcing strategies). In the absence of a significant reduction of wholesale caps reflecting genuine costs of international roaming, mobile operators will be induced or even forced to impose restrictions, also through complex and unfriendly contractual clauses, to end-users when roaming abroad. This will be an unexpected and disappointing outcome of the present regulation, which would undermine the credibility of the efforts carried out by institutions and industry up to now. The European Commission, with the support of BEREC, is to conduct this review by June 2016, which will still need to be agreed on by all parties. Negotiations could take more time than expected and postpone the real end of roaming. Additionally, during the transitional period, MVNOs risk margin squeeze and therefore urge for the review to be done as soon as possible. MVNO Europe will remain vigilant in this process in order to make sure that the revision will not distort the market in favor of the largest mobile operators and lead to the exclusion of dynamic smaller players.

### Airtel offering flat rate for roaming across Africa

Airtel customers can now enjoy flat and affordable rates for its customers travelling across Airtel's Africa countries, after the introduction of



"One Airtel." "One Airtel" roaming offer enables inbound roamers or visiting subscribers from all Airtel Africa countries to be treated as local customers in the visited country in terms of pricing, including receiving calls free of charge while retaining their home SIM card. Airtel Kenya customers can travel across sixteen Airtel Africa's countries and can roam on any of the Airtel networks for only Ksh. 12 per minute for all local calls within the country, and Ksh 35 per minute for any call back to Kenya or for an international call. Receiving calls while roaming still remains free of charge for the first 100 minutes a month. The countries where the new flat rate applies include Nigeria, Zambia, Tanzania, Malawi, Ghana, Sierra Leone, Seychelles, DRC, Gabon, Congo, Niger, Tchad, Burkina Faso and Madagascar. In addition, Airtel Kenya SMS rates to and within Uganda and Rwanda have been reduced to Ksh. 6/-. Previously, customers used to pay from Ksh. 13/- while roaming and Ksh. 10/- for international SMS to the two countries. Voice calls to and within these countries will remain the same at the rate of Ksh. 10 per minute. The changes in the tariffs within Kenya, Uganda and Rwanda is as a result of an agreement by the heads of state of three East African countries to reduce cross-border calling rates by 60 percent, as part of efforts to enhance regional integration.

### Bitflux to launch wholesale LTE network in Lagos by year-end

Bitflux Communications, the winner of a national 2.3GHz spectrum licence that was auctioned off in February last year, has rolled out a limited wholesale wireless broadband network in parts of Lagos, with plans to launch full commercial services in the city by the end of the year. Bitflux director Biodun Omoniyi told local newspaper Daily Trust that the 4G LTE network is ready in 'a controlled area in Lagos' and revealed that services are live in some parts of the city. A commercial launch is planned for Lagos by the end of the year, with network rollout in Abuja and Port Harcourt scheduled for 2016. 'We have our network ready in a controlled area in Lagos. It took us this long to roll out because the 2.3GHz spectrum is a very high frequency spectrum

which requires very huge funds and sound technology to put in place. Because we did not want a situation where our service will not be up to standard, we took our time to put in place the best network,' Omoniyi is quoted as saying. A consortium of VDT Communications, BitCom Systems and Superflux International, Bitflux emerged as the winner of the Nigerian Communications Commission's (NCC's) 2.3GHz spectrum auction in February 2014 with a bid of USD23.251 million, beating Globacom's offer of USD23.050 million. The 30MHz of spectrum will be used to provide wholesale wireless broadband access services to ISPs and other retail telecoms service providers, which in turn will offer retail high speed internet services to consumers. Earlier this year, Biodun Omoniyi, CEO of VDT Communications, said that rollout was originally expected to take place in 1Q15, but had been delayed by 'investment challenges' in Nigeria.

### Telefonica Espana fined by CNMC for breaching wholesale broadband rental regulations

Spanish telecoms watchdog the Comision Nacional de los Mercados y la Competencia (CNMC) has fined local fixed line incumbent Telefonica Espana EUR5.0 million (USD5.7 million) for violating regulations regarding the rental of broadband connections



to the nation's alternative operators. According to Reuters, the regulator ruled that Telefonica Espana, which offers its services under the Movistar banner, had applied charges and clauses in the rental of Ethernet circuits above those allowed by legislation. Operators affected by the violations – which the CNMC said had been repeated between October 2010 and

February 2015 – included Vodafone Spain, Jazztel and BT.

While the decision cannot be appealed via administrative channels, the CNMC did confirm that Telefonica Espana could fight it via the High Court, with a two month deadline for the telco to start such action should it choose to.

## Telkom SA spins off wholesale division into a separate company

South African incumbent fixed line operator Telkom is set to establish a separate wholesale company – dubbed ‘Openserve’ – in line with its turnaround strategy to divide its wholesale and retail divisions ‘to facilitate greater focus, accountability and customer centricity’. The division is set to supply Telkom and alternative telecoms operators with wholesale fibre broadband access as well as



metro Ethernet, IP Connect (IPC) and South African Internet eXchange (Saix) services, in addition to reselling DSL services. Telkom CEO Siphon Maseko said the decision to establish Openserve as a standalone infrastructure provider would have a big impact on South Africa’s economy and would help to bridge the digital divide. ‘Through this separation, Telkom will improve its customer focus and establish clearer lines of accountability. As a standalone business unit within Telkom, Openserve will be autonomous and will be responsible for its own profit and loss account,’ the company said.

## ACCC announces one-off uniform 9.4% reduction in fixed line access service charges

A final decision relating to the prices that alternative operators pay to provide services over Telstra’s copper network has been published by the Australian Competition and Consumer Commission (ACCC). The regulator has revealed that there will be a one-off uniform reduction of 9.4% in access prices from current levels, with this applying to the seven fixed line access services: unconditioned local loop service (ULLS), line sharing service (LSS), wholesale line rental (WLR), local carriage service (LCS), fixed originating access service (FOAS), fixed terminating access service (FTAS), and wholesale ADSL service. The ACCC’s final decision also covers connection and disconnection charges and a decision to not exempt the central business district (CBD) areas from coverage under the final access determinations. With the new prices to apply from 1 November 2015 and remain valid until 30 June 2019, the cost of ULLS in Bands 1, 2 and 3 will fall from AUD16.21 (USD11.67) per month to AUD14.68 per month, while in Band 4 the charge will be reduced from AUD48.19 to AUD43.65. WLR will drop to AUD20.69 per month (down from AUD22.84), with LSS charged at a monthly AUD1.63 (AUD1.80). LCS will cost AUD0.089 per call (down from AUD0.095), and FOAS and FTAS will both be billed at AUD0.0086 per minute (AUD0.0095). Wholesale ADSL connections in Zone 1 will drop to AUD22.14 per port per month, compared to AUD24.44 at present, while in Zone 2/3 the service will cost AUD26.87 per port per month, down from AUD29.66. ACCC chairman Rod Sims commented: ‘The ACCC has dealt with a number of complex issues during this inquiry, including the unique circumstances of the transition from Telstra’s copper network to the National Broadband Network [NBN].’

In terms of factors affecting the decision, the regulator cited lower costs of the copper network; a ‘very significant’ decline in the cost of capital since 2011; low inflation over the 2015 financial year; and new forecasts from NBN Co on its rollout schedule for the NBN. Additionally, upward pressure on prices resulted from the ACCC’s decision to adopt a fully allocated cost model in combination with declining demand for fixed line services due to substitution of mobile for fixed line services and the migration to the NBN.

## Strategic partnership between Telefonica and MegaFon renewed

Spanish telecoms giant Telefonica and Russia’s MegaFon have confirmed the extension of their strategic partnership, which was first unveiled back in May 2013. The companies claim that extending the agreement will make it possible for both to ‘continue to benefit from their collaboration in a variety of areas, including procurement, expansion of their international customer base and exchange of best practices’. Since first striking the partnership deal, MegaFon and Telefonica have worked together on marketing and channel approaches, on new network technologies such as NFV, and on procurement of selected network equipment. Further, the partnership has also included cooperation on international wholesale for selected parts of the world. A press release confirming the updated deal notes that the duo have completed a number of projects for major multinational companies (MNCs), while they have also expanded their customer base with new data and wireless projects for Russian and international companies. As a result of the partnership extension, MegaFon will continue its membership in the Telefonica Partner Program, while Telefonica will continue to extend its reach to the Russian market and gain industry insights provided by MegaFon.

## TPP tackles telco global roaming charges

Trans-Pacific Partnership (TPP) is taking aim at the high cost of mobile global roaming, with the 12 signatory countries reaching an agreement to encourage competition in wholesale pricing for access to foreign mobile



networks. The TPP, which reached agreement on Monday after talks had stalled several times over digital rights and other issues, will regulate trade between Australia, the United States, New Zealand, Canada, Singapore, Vietnam, Malaysia, Japan, Mexico, Peru, Brunei, and Chile. "After five years of intensive negotiations, we have come to an agreement that will create jobs, drive sustainable growth, foster inclusive development, and promote innovation across the Asia-Pacific region," said US Trade Representative Michael Froman. Reliable and efficient telecommunications networks are a critical part of trade and supply, according to the TPP, with the document encouraging competitive network access rules for mobile suppliers; transparent regulatory procedures; regulations that do not discriminate against technologies; and timely, transparent, and non-discriminatory processes for allocating and using scarce telco resources, such as spectrum frequencies, phone numbers, and rights of way. The 12 Pacific rim countries have also agreed to attain lower global roaming charges through regulation. "Australia has successfully advocated for a provision that addresses, for the first time, the high cost of international mobile

roaming," the Australian Department of Foreign Affairs and Trade announced in its TPP overview [PDF]. The United States government expanded on this, saying the plan involves increasing global roaming competition, ensuring equal access to wholesale rates between countries should one decide to offer a lower price, and providing

other options for telco usage while travelling overseas. "They also agree that they may take steps to promote competition in international mobile roaming services and facilitate the use of alternatives to roaming," the Office of the United States Trade Representative said in its TPP summary. "TPP parties agree that, if a party chooses to regulate rates for wholesale international mobile roaming

services that party shall permit operators from the TPP countries that do not regulate such rates the opportunity to also benefit from the lower rates." Similarly, the European Commission had earlier this year sought to scrap global roaming fees by 2016, with the European Parliament voting in a proposal to have roaming prices dictated by local competition in the country being visited by travellers. However, in March, a majority of the 28 European Union member states in the European Council barred this from occurring by voting in favour of keeping roaming charges until 2018. They suggested an alternative scheme that would grant travellers a "basic roaming allowance" -- of only 5MB per day -- and calls, messaging, and data usage thereafter charged at a rate set lower than the maximum wholesale rate paid by operators to use the networks in other countries. "This is a scandal. An end to roaming charges and the delivery of a genuine single market for telecoms was a campaign priority for all parties, many of whom are today responsible for blocking this measure," said Guy Verhofstadt, president of the Alliance of Liberals and Democrats for Europe in the European Parliament. "To say this text lacks ambition is an understatement. Certainly our group

will not accept this text, as the only winner from it is national telecoms operators themselves. Member states should hang their heads in shame." It is not yet known what form the global mobile roaming regulatory rules will take in the TPP, but Foreign Affairs, Trade, and Development Canada pointed towards a similar wholesale approach decided between telcos and shared between member states. "A dedicated article addressing the high cost of international mobile roaming ... Ensures that a party's regulated rates and conditions on wholesale international roaming services are provided to the other parties' telecommunications service suppliers on a reciprocal basis," Foreign Affairs, Trade, and Development Canada said in its summary on the TPP's telecommunications chapter. A limited number of telcos and other providers have previously worked to improve global roaming costs, with Vodafone Australia offering customers on its Red plans international roaming capped at AU\$5 per day and Apple selling a SIM in Australia, the US, the UK, and several European countries that allows customers to switch between mobile providers on short-term prepaid plans in each country. Google is also reportedly negotiating with UK telco Hutchison on a wholesale access agreement to provide Google's US MVNO customers to make calls, send messages, and use data anywhere in the world for only the cost of their usual plan. Customers of UK telco Three can already access their monthly allowance of data, calls, and messaging for no additional cost while travelling in Australia, France, the US, Hong Kong, Italy, Ireland, the Nordics, and other countries. The TPP is also endeavoring to push trade and commerce giant China into conforming to the regulations imposed on its neighbors by the TPP. "When more than 95 percent of our potential customers live outside our borders, we can't let countries like China write the rules of the global economy," United States President Barack Obama said in a statement. "We should write those rules, opening new markets to American products while setting high standards for protecting workers and preserving our environment." The full text of the agreement has yet to be published, with the 12 member states only releasing summaries.

## NTT Docomo to launch VoLTE international roaming in South Korea

Japan's leading mobile operator by subscribers, NTT DOCOMO, has announced the upcoming launch of its voice-over-LTE (VoLTE) international roaming service in South Korea, on October 7, making it the first Japanese operator to offer a VoLTE outbound roaming service. The cellco says that no fewer than nine of the new smartphones it has unveiled as part of its winter/spring line-up are compatible with the new service, which it claims will enable users to make high-quality voice and video calls. The launch in South Korea comes by dint of a partnership agreement with Seoul-based KT Corporation, one of the country's largest mobile operators. VoLTE is proving popular in Japan; mobile users in the country had placed VoLTE calls from more than ten million smartphones as of 31 August, according to DOCOMO research. Its new roaming service incorporates S8 home routed (S8HR) architecture, which is used to enhance the existing LTE data roaming architecture to support VoLTE under a roaming environment. The S8HR architecture is a method based on 3GPP standards to realize VoLTE roaming. Going forward, DOCOMO expects to expand its VoLTE roaming service into other countries through partnerships with local companies.

## Syniverse extends LTE roaming reach for Telin

Syniverse and Telin today announced that they have signed a multiyear agreement to provide Telin, one of the largest network service providers in Southeast Asia, with 4G roaming and signaling connectivity through Syniverse's IPX Network Solution. Through the agreement, Syniverse will enable Telin to deliver seamless LTE roaming services to its sister company and Indonesia's largest operator, Telkomsel, which has more than 120 million subscribers. "Collaboration with Syniverse has strengthened Telin's capability in delivering LTE roaming services to customers," said Natigor Sitorus, Director of Marketing and Sales, Telin. "In addition to the increased capability in infrastructure and footprint, the agreement will also

enhance Telin's portfolio in the business sector by providing an interoperable and versatile network." Syniverse's IPX Network Solution interconnects the world's networks to make LTE roaming possible. The IPX Network Solution provides a carrier-grade connection to the company's all-IP network, which currently serves more than 2,000 LTE roaming routes. The enhanced roaming reach Telin achieves through Syniverse's IPX network is supported in part by Syniverse's Diameter Signaling Service, which enables signaling routing and interoperability. Together, these solutions deliver multiple class-of-service levels to support voice, data and video with guaranteed security. Indonesia and Asia Pacific represent a critical market for LTE roaming in the next few years, according to GSMA Intelligence. The region has half of the world's subscribers and connections, with 1.8 billion and 3.8 billion, respectively, and smartphone adoption is forecast to rise from 40 percent in 2015 to over 50 percent by 2016, and reach 66 percent by 2020. "We are honored that Telin chose Syniverse to extend its LTE roaming reach," said MK Chang, Vice President, Advanced Signal and Network Interoperability, Mobile Transaction Services, Syniverse. "At the forefront of LTE roaming enablement for operators around the globe, Syniverse looks forward to using this expertise combined with LTE reach to more than 270 operators in 44 countries to help Telin deliver the highest level of LTE service." The agreement with Telin builds on Syniverse's recent accomplishments in Asia, including supporting Amazon China in optimizing mobile customer engagement, providing global A2P messaging for the Bigo free-call app, enabling Wi-Fi connectivity for Samsung Indonesia, delivering the Syniverse IPX Network Solution for SoftBank, and launching the world's first VoLTE (Voice over LTE) services for LG Uplus and KDDI.

## Tele2 prepares for LTE roaming ramp-up

Telco expects IPX deployment, roam-like-home regulations to spark rapid growth in number of customers who access mobile data abroad. Tele2 said it is preparing for huge growth in roaming LTE traffic, driven by IPX deployment and the EU's 'roam-like-home' regulations. According to the

Global mobile Suppliers Association (GSA), there were 422 live LTE networks spread across 143 countries at the end of the second quarter. By 2020, it predicts the number of LTE subscribers will have grown to 3.5 billion from 755 million at the end of Q2 this year. "The need for LTE data roaming is essential," said Jan Karmakar, director of Tele2's international carrier and roaming business, at Carriers World, which is running alongside Total Telecom's IPX Summit in London this week. Tele2 began rolling out IPX across its footprint in 2014, and its operating businesses have been launching LTE roaming services ever since. On Wednesday, Karmakar said Tele2 experienced a 50-fold increase in inbound roaming traffic in 2015, compared with 2011. "That was without introducing any special price plans," he said. "Roam-at-home tariffs will drive data volumes even higher." Indeed, the EU has set plans in motion



with a view to abolishing roaming charges across the bloc by June 2017. Until then though, operators in the EU will continue to charge a premium when customers access mobile services while abroad, which throws up challenges when it comes to voice over LTE (VoLTE) roaming. "VoLTE roaming will take some time," Karmakar said. He highlighted that the industry is having difficulty working out how to bill for it, with some suggesting charging per megabit, rather than the traditional per minute billing normally associated with voice; however, that would have to take into account variances in network speed. "There is quite some journey before we solve that," he said.



## Three factors critical to mobile broadband investment in MENA

In the next few years, the Middle East and Africa will offer one of the most dynamic areas of any region in the world for investment in broadband networks, and mobile will lead the way. In addition to a large population and increasing smartphone and data usage, the region presents a tremendous opportunity for mobile broadband growth since many rural areas barely have any wireline penetration available now.

To appreciate the increasing opportunity for mobile broadband – specifically LTE – in the region, consider the area's recent growth. In 2013, mobile data traffic in the Middle East and Africa more than doubled, growing 107 percent, and overall the region is expected to have the strongest mobile data traffic growth of any part of the world, with a 72 percent compound annual growth rate from 2013 to 2018, according to Cisco. What's more, Cisco forecasts that the percentage of smart devices and connections will rise from 11 percent in 2014 to 41 percent by 2019.

Moreover, as an example of how the mobile broadband opportunity is taking shape, in the Middle East, every mobile operator in the Gulf Cooperation Council – including Bahrain, Kuwait, Oman, Qatar and Saudi Arabia – now has at least one LTE network. What's more, LTE subscriptions are expected to grow to 30 million in these countries by 2018, according to Pyramid Research.

As these numbers show, the next phase of LTE will be crucial in serving the world's exploding mobile data needs. However, LTE deployment involves a number of complex technology challenges. On the technology end, operators have to install new equipment and adapt existing infrastructure to new standards. On the business end, operators have to determine new pricing structures and reconfigure business partner relationships for roaming. The next phase of LTE growth will depend on how well operators are able to manage infrastructure investments to tackle these complexities as smoothly as possible.



**Nour Al Atassi**  
Regional Vice President and  
Managing Director  
Middle East and Africa,  
Syniverse



At Syniverse, we have been in the thick of helping operators address these challenges. As LTE rollout accelerates, we have identified three factors that we think operators should place special focus on in investing in LTE to meet the expectations of their users:

1. Maximizing reach with IPX – Operators deploying LTE must focus first on establishing reach to a maximum number of LTE networks to offer the widest coverage for their users. IPX has emerged as a fundamental network backbone for LTE, VoLTE and next-generation services, allowing operators to efficiently achieve this reach. This technology allows a single-connection approach that greatly simplifies testing and deployment while consolidating the establishment of a large number of connections worldwide. Moreover, new improvements in IPX technologies enable an integration of services and link to operators worldwide through a single-to-many connection. Consequently, operators should invest in IPX as the core part of their strategy to establish a maximum number of direct connections.
2. Ensuring roaming interoperability – Enabling ubiquitous roaming is a special challenge of LTE. It requires a series of comprehensive testing and validation of critical roaming processes, such as clearing and settlement, and customer-experience management between

- LTE networks. In particular, through Syniverse's work to enable LTE roaming for numerous operators, we have identified one potentially problematic area. LTE roaming requires operators to submit new call detail record information to their clearing houses in order for the records to be processed and changed to TAP accurately. During testing, we discovered that a number of initial submissions didn't include this necessary information completely or in the right format, seriously hampering accurate wholesale and retail billing. As a result, we devised several solutions to remedy this and at the same time identified compliance with the new clearing requirements as a critical component in ensuring the performance of LTE roaming. This is a complex area of LTE for which operators should carefully allocate their investments.
3. Implementing Voice over LTE (VoLTE) – Voice communication represents the next frontier of LTE, and enabling VoLTE poses special challenges. To implement this technology, operators must manage the complex process of converting voice calls into Internet traffic so the same airwaves can be used for voice or data. Among the challenges in doing this, one of the most critical involves a roaming marketplace that is fragmented into three types: markets with no LTE service, markets with both LTE

and legacy 3G and 2G service, and markets with only LTE service. Operators must have a separate strategy in place for a number of roaming situations and fallback scenarios to minimize disruptions among these three types of network situations. Above all, they must ensure that VoLTE calls will seamlessly hand off to older technologies when users travel through areas that lack LTE service, and that users with VoLTE service enjoy seamless connections to available LTE service with minimal disruptions. In this area, Syniverse has been helping a number of operators confront the unique circumstances for enabling their initial VoLTE connections.

Today's users in the Middle East and Africa are increasingly expecting high-speed connectivity and high-data capacity anytime, anywhere. As operators are pressured to deploy LTE networks faster and faster to meet these demands, determining how they make investments related to the three factors above will go a long way toward helping ensure a successful transition to a new mobile broadband era.



## Broadband network investment: Three actions for regulators and policy-makers

*"Regulators and governments can help to improve network planning, reduce investment costs and attract innovative technologies and commercial models to improve investment in broadband networks"*

This article presents the findings of a discussion paper<sup>[1]</sup> written by Analysys Mason for the International Telecommunication Union (ITU) and presented at the Global Symposium for Regulators 2015 (GSR15) to identify the role that regulators and government policy makers ('managing authorities') can play in attracting investment in broadband networks. This is the second in a series of articles summarising the paper's findings.<sup>[2]</sup>

Investment in broadband network infrastructure is now more important than ever, as governments seek to strengthen their country's position in the digital economy in order to create jobs, economic growth and prosperity. [3] However, the financing of broadband infrastructure can be a high-risk venture for investors as it requires significant upfront capital investment and the payback is not immediate. Investors are more likely to make an investment in a favourable market environment, as this will minimise their risk and maximise the commercial returns. Therefore this article considers what managing authorities can

do to attract investment in broadband networks. Drawing upon practical examples from a wide range of countries we have identified a number of initiatives that regulators and governments can undertake to improve network planning, reduce investment costs and attract innovative technologies and commercial models.

### **Making broadband infrastructure coverage maps available to operators and expediting licence applications can promote network coverage expansion**

Managing authorities should facilitate information sharing with operators by providing up-to-date broadband coverage and passive infrastructure mapping data. This will assist operators with network planning and allow infrastructure investment to be prioritised in those areas where it is needed most. Google, for example, has invested in wholesale fibre networks in Africa, because the lack of adequate infrastructure has been a barrier to the provision of high-speed broadband services. Google emphasises the important role that local governments can play in reducing the complexity of fibre networks, by providing new entrants with access to existing fibre networks, and maps of gas and water mains and overhead power lines, as well as expediting the granting of construction permits.<sup>[4]</sup>



**Iqbal Singh Bedi**  
Principal  
Analysys Mason

However, as well as providing maps, managing authorities should also ensure that operators have clarity on passive infrastructure-sharing rights. For example, operators need to understand which components of the existing infrastructure (e.g. ducts, telephone poles, power lines) can be used, and what rules govern their use.

### **Regulatory approval for network-sharing deals can encourage investment in rural areas**

Due to the challenging economics involved, investments in rural and hard-to-reach areas have largely involved the deployment of wireless solutions. However, managing authorities can play an important role by building passive infrastructure or approving network-sharing deals to encourage operators to reduce the cost of deploying broadband networks. Regulatory approval for network-sharing deals among mobile operators can bring improved efficiencies, as it allows them to reduce operating costs and share ongoing investment in new sites, thus making investment in rural areas more commercially viable. In France, Bouygues Telecom and SFR concluded a significant network-sharing agreement in February 2014, enabling the two operators to reduce their site numbers by around 40%. This has generated savings of about EUR100 million per year for Bouygues Telecom and EUR200 million per year for SFR.<sup>[5]</sup> For end users, network sharing has the benefit of improved coverage, particularly in rural areas. For example, eight major mobile operators in the Middle East and Africa announced plans in March 2014 to work together on a new network-infrastructure-sharing initiative to reduce costs and improve rural broadband coverage.<sup>[6]</sup>

In the UK, the government funded a programme to improve mobile coverage in remote areas by 2016. The Mobile Infrastructure Programme (MIP) was set up in 2013 to fund the construction of passive mobile infrastructure in remote and rural areas of the UK which had either little

or no mobile coverage. The network infrastructure will be offered to mobile operators on a wholesale basis to promote competition and reduce costs.<sup>[7]</sup> However, for a variety of technical, commercial and operational reasons, progress has been limited.

Managing authorities can also encourage fixed operators to explore alternative ways of reducing costs. In areas where incumbent fixed operators own legacy copper infrastructure, regulators can (subject to local constraints) allow operators to decommission their copper networks. In these situations operators can extract and sell the copper infrastructure, to generate funds to offset future investment in fibre networks. However, there are limitations to this approach, as copper decommissioning will only be possible in countries where wholesale services such as local loop unbundling (LLU) and bitstream services are not present. In addition, the cash benefits will not be immediate, as the copper network can only be decommissioned once the fibre network has been built.

### **Technical and commercial innovation is important in the development of a digital economy and can lead to increased investment in broadband infrastructure**

Managing authorities can play a key role in encouraging investment in innovative technologies and in new investment models. For example, regulators can play an important part by approving technology pilots for new and innovative technologies. Innovative or 'disruptive' technologies are often developed to overcome challenges (e.g. such as cost) associated with using current-generation technologies to deploy broadband networks. However, it can be difficult to gain approval to use new technologies in broadband networks, as they are unproven.

One such technology that is gaining prominence in both developing and developed markets is the transmission of data using UHF TV white space.

<sup>[8]</sup> This approach can address issues such as the lack of available spectrum, because white-space spectrum is licence exempt.<sup>[9]</sup> It also benefits from the strong propagation characteristics of UHF spectrum, which means that fewer base stations are required to cover a given area. White-space pilot projects have been launched in Scotland (to provide Internet access on a ferry boat) and in Bhutan (to connect remote health units).<sup>[10],[11]</sup> Regulators in the USA and the UK are developing TV white-space regulations in preparation for the commercial use of white-space technology.

Managing authorities can also play a role in encouraging investment in community broadband networks. Due to the not-for-profit nature of these initiatives they may be financially viable in areas where the returns would be too low for commercial operators, particularly in rural districts. However, the scale of such schemes is generally small and would be complementary to other larger national broadband schemes.

In Germany, for example, a number of communities joined forces with local governments, businesses and individuals to finance the construction of a high-speed broadband network in the provinces of Nordrhein-Westfalen and Schleswig-Holstein.<sup>[12]</sup> The regulator ensured that the infrastructure was offered on an open-access basis, as the network was built using public funds.

Another example is provided by Scotland, where the government's Community Broadband Scotland (CBS) scheme provides financial support to communities that decide to engage in community broadband projects.<sup>[13]</sup>

In the USA, the communications regulator, the FCC, allowed two community broadband providers in the states of Tennessee and North Carolina to expand the geographical provision of their services, even though the law in these two states had previously prevented such expansion from taking place.<sup>[14]</sup>

<sup>[1]</sup> The paper, Investment strategies for the deployment of broadband and access to the digital economy, draws on practical examples from a wide range of countries to develop best-practice guidance for regulators and government policy makers ('managing authorities') that wish to foster and secure investment in broadband networks. The paper is available at [http://www.itu.int/en/ITU-D/Conferences/GSR/Documents/GSR2015/Discussion\\_papers\\_and\\_Presentations/Discussion%20paper\\_investment.pdf](http://www.itu.int/en/ITU-D/Conferences/GSR/Documents/GSR2015/Discussion_papers_and_Presentations/Discussion%20paper_investment.pdf). Since its inception in 2000, GSR – attended by chief regulatory officers, policy makers and senior industry executives – has met annually to examine key issues affecting the regulation of telecoms and digital services. See also <http://www.itu.int/en/ITU-D/Conferences/GSR/Pages/GSR2015/default.aspx>.

<sup>[2]</sup> The first article in this series can be found at <http://www.analysismason.com/About-Us/News/Insight/Broadband-investment-strategies-digital-economy/#06%20July%202015>.

<sup>[3]</sup> This investment can be in core, backhaul, metro or last-mile networks.

<sup>[4]</sup> See <http://telecoms.com/200521/uganda-is-next-stop-for-google-fibre-project/>.

<sup>[5]</sup> See <http://www.analysismason.com/About-Us/News/Insight/France-consolidation-Jun2014/#17%20June%202014>.

<sup>[6]</sup> See <http://www.zdnet.com/article/middle-east-africas-mobile-giants-take-first-steps-on-sharing-networks-to-cut-costs-boost-rural-coverage/>.

<sup>[7]</sup> See <http://www.ispreview.co.uk/index.php/2014/12/gbp150m-uk-mobile-infrastructure-upgrade-project-makes-slow-progress.html>.

<sup>[8]</sup> The term 'TV white space' usually refers to unoccupied portions of spectrum in the VHF/UHF terrestrial TV frequency bands in some geographical areas.

<sup>[9]</sup> A licence-exempt framework allows devices to operate on a non-interference/non-protection basis in compliance with technical specification and/or band rules without the need for an individual device licence. See ITU, Trends in Telecommunication Reform Special Edition: 4th Generation Regulation, Chapter 3 (White Spaces: Managing empty spaces or better managing inefficiencies?), available at <http://www.itu.int/en/ITU-D/Regulatory-Market/Pages/Trends/Trends-Special%20Edition.aspx>.

<sup>[10]</sup> See ITU, GSR Discussion paper: New frontiers in Spectrum Licensing, available at [http://www.itu.int/en/ITU-D/Conferences/GSR/Documents/GSR2014/Discussion%20papers%20and%20presentations%20-%20GSR14/Session4\\_GSR14-DiscussionPaper-SpectrumLicensing.pdf](http://www.itu.int/en/ITU-D/Conferences/GSR/Documents/GSR2014/Discussion%20papers%20and%20presentations%20-%20GSR14/Session4_GSR14-DiscussionPaper-SpectrumLicensing.pdf).

<sup>[11]</sup> See <http://www.scotsmans.com/news/scotland/top-stories/rural-scotland-to-lead-with-white-space-internet-1-3569913>.

<sup>[12]</sup> See <http://www.governancereport.org/home/governance-innovations/featured-innovations-2014/broadband-crowdfunding-germany/>.

<sup>[13]</sup> See <http://www.hie.co.uk/community-support/community-broadband-scotland/funding/default.html>.



## TECHNOLOGY NEWS

### TECHNOLOGY UPDATES

#### ZTE, HP and China Unicom Complete Testing of NFV-based VoLTE Technology

ZTE has announced the successful completion of a joint project with Hewlett Packard and China Unicom to demonstrate the feasibility of network function virtualization (NFV) based voice over long term evolution (VoLTE) services. The proof of concept (PoC) project involved a comprehensive range of vEPC and vIMS equipment and solutions provided by ZTE to be used when testing for end-to-end VoLTE services in virtualized environment deployment solutions. This included interoperability of management and orchestration (MANO) functions and interfaces, virtualized network function (VNF) lifecycle management, VNF disaster recovery and maintenance management, VoLTE end-to-end functionality and performance, data plane acceleration and packet domain gateway functions of C/F separation. To comply with the European Telecommunications Standards Institute (ETSI) reference architecture, the project was completed using HP's C7000 Blade server, and a virtualized infrastructure manager (VIM) provided by ZTE and HP. The project was also implemented using ZTE's vEPC, vIMS, VNF Manager and element management system (EMS) solutions, in addition to a network function virtualization (NFV) orchestrator provided by HP and ZTE.

#### Ericsson Applies 5G Concept for Up to 50% Higher Speed on LTE Smartphones

While standards for 5G are yet to be established, it is clear that the technology will employ ultra lean design improving the signaling schemes both to save energy and to enable the dense builds required by the expected new 5G spectrum. Ericsson says that its proprietary Lean Carrier innovation is first to address intercell signaling interference, introducing lean design concepts to 4G LTE to improve data speed and app coverage for users while on the road to 5G. Ericsson Lean Carrier is running live in thousands of cells in SK Telecom's (SKT) network where Ericsson and SK Telecom have now deployed Ericsson Lean Carrier in urban, suburban and rural areas. In a large-scale deployment, users can enjoy up to a 50 percent increase in downlink data speed with a network average increase of about 10 percent. Park Jin-hyo, Senior Vice President and Head of Network R&D Center, SK Telecom, says: "Through this technology commercialization on LTE base stations, we can expect to enhance the performance at cell edge area and user experience. In the future, SK Telecom will continue to adapt new technologies on LTE to support network evolution." By reducing interference, Ericsson Lean Carrier enables new 256 QAM higher

order modulation to be utilized over a broader area, extending the higher data speed advantage to the outdoor macro environment. Ericsson Lean Carrier increases the use of 256 QAM by up to 280 percent. Lowering intercell interference while simultaneously improving network performance requires innovation. Leveraging the flexibility and power of the Ericsson LTE baseband hardware combined with Ericsson's intelligent software scheduling algorithms, the Ericsson Lean Carrier innovation applies the design concepts being developed for future 5G systems to today's 4G LTE networks. Ericsson Lean Carrier reduces, or makes lean, the level of reference signaling needed for good network performance. This leads to a corresponding improvement of the downlink data speed which applies to all parts of the 4G LTE network, with the highest performance gains occurring in the areas with most cell overlap. Per Narvinger, Head of LTE, Ericsson, says: "When LTE was created in 2008, it was straightforward, powerful technology, but now we have added significantly more intelligence. Running signaling full-blast limits performance by creating unnecessary intercell interference. Drawing on our experience from high-performance networks and projecting forward to what will be possible with 5G, we were able to innovate a solution that optimizes the signaling in today's 4G LTE network. Operators are beginning to adopt more advanced encoding schemes to efficiently handle demands for improved user experience; however, use of the new 256 QAM higher order modulations require clean radio signals in order to increase the downlink data speed. By reducing interference Ericsson Lean Carrier increases the amount of time during which 64 QAM and 256 QAM encoding schemes can be utilized by the LTE system. Ericsson Lean Carrier can be implemented within Ericsson's LTE networks today, and the solution is compatible with all LTE devices. 5G will encompass an evolution of today's LTE technology and the addition of new radio access technologies, often in higher frequencies. These higher frequencies will drive smaller cell sizes, making it increasingly important to minimize unnecessary transmissions. This is the basic principle of 5G ultra-lean design.

## Etisalat and Intel join hands to deploy NFV and SDN in the network

Etisalat has signed a Memorandum of Understanding (MoU) with Intel to help networks cope with the new era of Network Function Virtualization (NFV) and Software-Defined Networking (SDN). Etisalat NFV/SDN deployment is aimed to enhance user experience and increase service agility and innovation. Virtualization will enable Etisalat offer customers, both businesses and consumers, flexible, scalable, more dynamic and innovative services. Under the strategic partnership, Intel will share knowledge, provide advice for competence build-up and assessment of NFV/SDN solutions to be deployed within the Etisalat network. The collaboration will foster both parties to utilize Intel technology in the telecom cloud infrastructure deployment. This will lead to a more open, standardized and highly efficient carrier grade SDN/NFV multi-vendor technology deployment. Esmaeel Al Hammadi, Senior Vice President, Network Development at Etisalat said, "We are pleased to announce our partnership with Intel, enabling our customers with faster access to innovative services on an intelligent network with better connectivity and reach. The deployment of NFV/SDN will provide flexibility as well as savings in the long-run, helping us better control and automate network functions and policies. This translates into a dynamic network delivering the latest services, facilitating new technologies deployment and meeting demands of our growing customer base." Taha Khalifa, Regional General Manager Middle East and North Africa added "NFV and SDN are already demonstrating the ability to transform networks for increased agility and efficiency. Intel is investing in technology, ecosystem enabling, open standards, open source, and deep industry engagements to accelerate availability of innovative solutions. Intel is delighted to partner with Etisalat to create a foundation for network transformation that will speed up the deployment of new digital services for businesses and consumers " NFV allows telecom operators to virtualize existing network functions by using customized software to work on common standard hardware cutting down costs, shortening time

to service and creating multi-vendor scalable environment. SDN enables carriers to use centralized software to control and automate network functions, services and policies in the cloud easily replicating software throughout the networks in a flexible and highly efficient approach.

## Small chip harnesses White Space to solve rural coverage issues

Google might be looking into extravagant methods of solving rural broadband coverage problems, but a small chip designed by Saankhya Labs in Bengaluru could be a more feasible solution in the short-term of connecting more people in remote communities to the rest of the world. The chip, called Pruthvi, beams an internet connection to households which can receive a TV signal but are unable to benefit from a fixed broadband infrastructure. Pruthvi harnesses unused TV spectrum – known as White Space – to bring more people online than ever before. Saankhya Labs, developers of Pruthvi, won the 40th ELCINA-EFY 2015 Award for "Excellence in Innovation" earlier this month. The company is part of the WhiteSpace Alliance, an organisation aiming to speed-up the deployment of "TV band" internet access. WhiteSpace is the creator of industry standards for broadband delivery over TV White Space such as the Wi-FAR™ and WSAConnect™ interoperability specifications which Saankhya Labs use for their Pruthvi chip. "Development of technical specifications and interoperability testing provides significant time-to-market and product reliability benefits to our members," said Dr. Apurva N. Mody, Chairman of WhiteSpace Alliance. "This is accelerating availability of cost-effective broadband access solutions in underserved regions of the world." Pruthvi is the size of a postage stamp and can be used as part of a complete system called Meghdoot which consists of a base station and user-side modem that can provide Wireless Rural Broadband over the TV White Space spectrum ranging from 400 to 800MHz. The technology does not require line-of-sight, thus ensuring longer range, and can serve up to a radius of 10-15km depending on antenna tower height and transmit power. If this range

is not enough, it can be boosted using more powerful and taller antennas. The system will soon be going into field trials in collaboration with IIT-Bombay, IIT-Delhi and IIT-Hyderabad. Saankhya Labs is also in discussions with Microsoft to do trials at Srikakulam in Andhra Pradesh. Beyond India, the Meghdoot system could be deployed in other countries thanks to its compliance with the Wi-FAR standard making it compatible for use elsewhere.

## Huawei to invest \$1B in developer ecosystem

Huawei is embarking on a charm offensive with developers, announcing it will invest up to \$1 billion over the next five years to build a developer enablement platform and establish partnerships with the sector. The announcement of the Developer Enablement Plan was made at



Huawei's Developers Congress today in Shenzhen. Ryan Ding (pictured), Huawei's executive director and president of products & solutions, said Huawei has opened up its ICT solutions to developers and is building an open environment and enablement platform for the operator and enterprise markets. The aim, he said, is to help developers create innovative services and rapidly respond to customers' business needs. Ding noted that the company has opened up to its developer technologies, such as cloud computing, big data, IoT and BYOD. In addition to technical cooperation and talent cultivation, Huawei said it will work out business partnerships with developers. Huawei announced that it will build a developer-centric platform

called eSDK based on the concept of LEADS (lab-as-a-service, end-to-end, agile, dedicated and social). This platform is designed to help developers accelerate technological innovation and increase their efficiency in developing differentiated services. In addition to providing lab-as-a-service based on the cloud, it will introduce the Developer Zone that supports social engagement among partners.

## Research Boosts Optical Fiber Data Speeds

In the latest advance to boost the speed of the Internet, a research team including, the City College of New York, University of Southern California, University of Glasgow, and Corning Incorporated, has demonstrated a way to increase the data speeds of optical fibers considered the Internet's backbone. "Optical fibers can be sped up by 'twisting' data; multiple data streams are transmitted and received as different twists of light," says Giovanni Milione, a City College doctoral student at the time. "Thought impossible using standard optical fibers which untwist the data, corrupting it, we showed that if the data was digitally re-twisted, after it was received, it could be recovered." To digitally re-twist the data, the researchers borrowed a well-known technique of radio communication, referred to as 'MIMO,' used by cell phones and Wi-Fi routers every day. "Light's twists were treated like antennas," Milione explains. "Even if transmitted data was untwisted, it was received as a different twist (antenna) and recovered." As a proof of principal, the researchers successfully transmitted four data streams on four twists of light over 5 kilometers of standard optical fiber. A key to their experiment was a University of Glasgow-made device that separates and combines light's twists as a prism does color. "This development could offer a solution to the insatiable needs of data-driven social media, such as, Facebook and YouTube, which continually push optical fiber data speed limits," said Distinguished Professor of Physics Robert R. Alfano.

## Ericsson and MTS Conduct Russia's First Live Trial of LTE Broadcast

Ericsson, Qualcomm and Russia's MTS have successfully completed their first live tests of LTE Broadcast. The trial took place at MTS' office in the city of Nizhny Novgorod, while video content was distributed from Aachen, Germany, using Ericsson's end-to-end LTE Broadcast solution, which shows the feasibility of a fully distributed operator solution. Pre-configured LTE Broadcast-enabled mobile devices powered by Qualcomm Snapdragon810 processor with an integrated X10 LTE modem. LTE Broadcast delivers a totally new video experience, offering the highest quality broadcast video over LTE networks and enabling new video services, while helping service providers to optimize network resources and available spectrum and offload networks. The service uses Single Frequency Network technology, such as DVB-T, to distribute the signal to an unlimited number of recipients. Users only need an LTE Broadcast app installed on their devices in order to access the service. During the test, the devices received different video feeds. The necessary features were enabled on the trial devices featuring the Snapdragon™ 810 processor with X10 LTE, which features Qualcomm Technologies' comprehensive LTE Broadcast solution for the evolved Multimedia Broadcast Multicast Service (eMBMS). The solution featured the chipset, broadcast middleware, multimedia services, and a proven interface for LTE Broadcast application development. Additionally, the X10 LTE modem supports up to 450 Mbps download speed even in intensive use cases like 4K video streaming. The capability and the flexibility enabled by LTE Broadcast is a powerful tool for operators wishing to leverage the impact and attraction of media content to provide new services and business opportunities in the digital mobile era. According to the latest Ericsson ConsumerLab report, 50 percent of Russian consumers watch TV and video on their smartphones, and 37 percent are ready to pay for HD-quality video. LTE Broadcast is a single-frequency network (SFN) in broadcast mode that is part of the series of 3GPP LTE standards known as evolved Multimedia Broadcast

Multicast Service (eMBMS). It extends existing LTE/Evolved Packet Core (EPC) systems with an efficient point-to-multipoint (PMP) distribution feature. Ericsson LTE Broadcast supports a range of use cases: live streaming of video for high-demand content such as live sports, breaking news, most popular media delivery, e.g. popular TV show, video, music and e-printing, top OTT contents, software updates and emergency broadcasting

## Qualcomm readies itself for 5G with key technology breakthroughs

Carriers and the companies that support them are preparing the next generation of wireless networking called 5G. Every decade or so, the wireless industry gets behind a new set of standards to improve the cellular experience for customers and the bottom line for operators. About ten years ago operators began setting standards for 4G networks, and as customers moved from 3G to 4G LTE cell phone owners noticed a big boost in speed. 5G consumers still get a potential speed boost—perhaps up to gigabit speeds—but there is far more at stake than just cell phones. That's because the 5G upgrade is also designed for the Internet of things. Unlike all previous versions of wireless networking, this version of technology standards setting will involve automakers, hospitals, and industrial conglomerates. Unlike the move to 4G, which was all about boosting capacity, the move to 5G is about creating a network optimized for connecting billions of new devices to the Internet. There's a capacity increase, because we're still using up as much bandwidth as we can with 4K Netflix on the go and live streaming apps such as Meerkat or Periscope on our mobile phones. But operators are also adding technologies that will save on battery life, reduce the amount of data sent with a mobile data packet, and speed up the amount of time it takes the data to flow across the network for sensors, autonomous cars, and mobile medicine. That speed is known as latency, and it's going to be a big deal for delivering telemedicine and the huge amount of data autonomous vehicles need. "All the previous network technologies aren't quite good enough," said Marcus Weldon,

CTO of Alcatel Lucent and president of its Bell Lab's division. "Up until now we've designed the networks for people and their needs and now we're designing it for things." Unsurprisingly, Qualcomm, a leading chip tech vendor in the mobile world, is already hard at work making upgrades to 5G possible. In an exclusive interview with Fortune, Qualcomm's executive vice president and chief technology officer Matt Grob says the company has been developing new technologies to commercialize for use in 5G wireless deployments. Grob says he expects to see these in use by 2020. Altogether these new technologies deal with increasing capacity, reliability, and latency. Before we dive in, it's important to know that one way 5G plans to eke out more capacity is to go after spectrum that we don't currently use in what's known as the millimeter band. There are several challenges with using this spectrum. The first is that in several parts of the world, including in the U.S., government agencies such as the military are using it and don't want to share it with civilian communications. The second is that the spectrum itself doesn't travel through walls, water, or even foliage. That means that rain or a poorly placed tree blocks reception and any data transmission. The other part of Qualcomm's plan is to go after capacity by using Wi-Fi networks, which causes a lot of worry about how existing Wi-Fi networks will behave when cellular phones start trying to "borrow" their capacity. Qualcomm's solution to grabbing more spectrum is complex. It plans to build a radio that can constantly search for any available spectrum be it millimeter wave, Wi-Fi, or licensed cellular radio and use that. If this sounds similar to what Google and Apple have proposed recently, it is similar in idea, but different in execution. Google GOOG 1.59% and Apple AAPL 1.48% are searching for the best radio signals using their respective Android and iOS operating systems, but Qualcomm QCOM 1.14% will do it at the radio level. The radios will be in both phones and in the cellular base stations that operators put in towers and around towns. One useful feature of this technology is that battery-powered sensors might contain a radio that "speaks" only using a low-power technology to save on battery life, but the base station will still be able to hear it. However, a car might have several types of radios

that can speak to a base station to enhance reliability. The base stations will be able to understand it all. That's the first technology Qualcomm has developed. The second is around carrier aggregation. Basically, this is one of Qualcomm's major initiatives and basically means adding a bunch of megahertz of spectrum to make one big chunk of spectrum. This matters because the amount of bandwidth an operator can deliver is limited by the size of the chunks of spectrum they have. To get to gigabit speeds over wireless an operator needs something like 80 megahertz of spectrum all packed together. But since all the good spectrum is taken we can't make whopping huge chunks out of it. Qualcomm's big breakthrough is figuring out how to take spectrum used in today's LTE networks and in Wi-Fi networks and in tomorrow's 5G networks and squish it all together in such a way that the radios see it as a contiguous lump of spectrum that consumers can use to get their gigabit mobile speeds. Finally, after all of the spectrum and radio magic has been achieved, carriers still have to make money. Since data is getting to be a commodity and operators are worried about becoming a dumb pipe, Qualcomm has built a new network design that lets mobile operators create new business models around services. This has been a dream of companies such as Alcatel Lucent ALU 2.30% and Cisco CSCO 1.04% for a while and so far it hasn't quite caught on, but with the Internet of things it's possible that delivering location-as-a-service or perhaps selling guaranteed latency for telemedicine might finally catch on. These three technologies are Qualcomm's contribution to 5G networks, a future that will arrive by 2020 according to Grob. As that timeline approaches we're going to hear from more and more companies about their vision for the 5G future. Already Intel and Verizon are working together to build a partnership around 5G technology. And the fact that Intel INTC -0.30% is involved in this is both a testament to how much Intel's ambitions have stretched, and how much 5G will expand the role of cellular as it encompasses the Internet of things. So get ready for gigabit wireless internet, but know that that's the least of what's happening in 5G.

## Adoption of GSMA Embedded SIM Specification helping mobile industry to benefit from \$1.1 trillion IoT opportunity

The recent announcement that operators Indosat, Tele2 and Telefónica Vivo have launched commercial solutions based on the GSMA Embedded SIM Specification is further demonstration of its broad appeal and role in helping to scale the burgeoning machine-to-machine

an operator to be selected at the country of destination. Automakers can be confident that with the GSMA Specification they have access to the whole market of operators – the same cannot be said for proprietary solutions. The IoT market has been in need of standardised solutions and this demonstrates how mobile operators are being proactive in addressing the concerns of auto manufacturers and OEM's. There have already been a large number of operators, auto manufactures and OEMs that have formed partnerships in order to capture a share of the connected car market, which is indicative of the confidence in this sector. The success of the GSMA's Specification here will likely act as a trigger for the adoption of a standardised interoperable M2M solution across many other verticals. It is clear that operators see the value of providing commercial solutions based on an interoperable and united global standard that will allow them to provide scalable, reliable and secure connectivity. As the number of adopters of the GSMA Embedded SIM Specification increases, economies of scale will drive down the cost. Analyst firm Machina Research estimate that the total addressable M2M revenue opportunity for operators will be USD \$1.1 trillion by 2020. Operators looking to capitalise on this should ensure their solutions are compatible with the Specification as soon as possible.

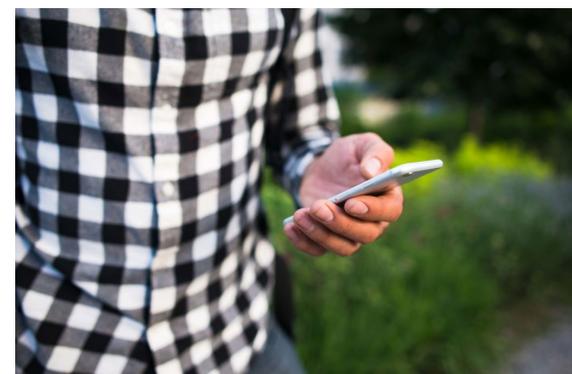
## AT&T's NumberSync promises one phone number across all devices

AT&T is readying NumberSync, a new feature that will allow its customers to share a single number across smartphones, tablets and other devices through its network. The service, which will launch "fairly soon", will be designed for its customers to own and use multiple devices that have built in wireless connections and connect to a primary phone number. This means users can send or receive texts and calls from a number of devices through that same recognisable number. The US operator said the service is network-based, meaning it will work "even if your primary phone is turned off or disconnected from the network", and will also not be

limited to one device or operating system. Apple has a similar offering, based purely on its own devices, to allow users to make calls and send messages through Macs or iPads, as well as its smartphones. In time, AT&T expects the service to develop to accommodate even more devices, and said it is actively working with its ecosystem to integrate NumberSync. AT&T's mobility CEO Glenn Lurie told Re/Code this could include smartwatches, other wearables and even connected cars in the future, while noting pairing smartphones to cars via Bluetooth remained a complicated experience. "This is really a first in the industry that we are giving customers the ability to do this," Lurie told the publication. The US operator had reportedly been testing the underlying technology under the code name Cascade since last year, and said there won't be a separate charge to share one number. Re/Code reports many existing smartphones will be able to support the feature through a software upgrade, with the company looking to work with all manufacturers going forward.

## Spending on Mobile Technologies to Reach \$1.2 Trillion by 2019

Organizations across industries are increasingly leveraging mobility to transform their businesses. Mobility may have started with the simple concept of shifting employees from being deskbound to being mobile.



But it has advanced and evolved in such ways that many organizations are embracing capabilities unique to mobility and unique to their industries. Each vertical is different in terms of its underlying industry drivers, barriers,



(M2M) and Internet of the Things (IoT) markets. These recent deployments mean that eleven operators have now launched commercial solutions based on the GSMA Specification, with a further fourteen committed to launch solutions in future. It has quickly become the de facto industry standard and a common language, reducing market fragmentation and helping to connect everything and anything to the internet, such as smart meters, traffic lights, cars and industrial equipment. GSMA Intelligence has calculated that nearly 75 per cent of global M2M connections are now serviced by mobile operators deployed or committed to the GSMA's solution, underscoring the momentum behind the Specification. The GSMA Embedded SIM Specification has been widely adopted because it offers significant advantages over propriety solutions. It gives a clear advantage to end users in that they will be able to swap profiles 'over the air' without having to replace the SIM itself – something particularly useful for devices that are hard to reach or stored in remote locations. One of the primary applications of the GSMA Specification will be in the automotive sector, where there is high demand for features such as tracking, vehicle diagnostics and infotainment. The GSMA Specification is ideal for global products, because it allows

and potential benefits. Industry-specific applications will be a driving force as businesses look for solutions that can be easily configured to their unique business and vertical requirements. Key findings from the new report include:

- Worldwide, the manufacturing sector represents the largest enterprise opportunity for mobile technologies. The industry's sizeable economic footprint and global operations create a naturally large market.
- Consumer-centric industries such as retail, media, and personal and consumer services are leveraging mobility to engage and connect with their customers to improve their experience, bolster loyalty, and generate larger sales per customer.
- There are still numerous concerns around mobility (and all of the other pillar technologies). Security and regulatory issues remain the biggest barrier for mobile technology adoption across industries such as government and financial services.

According to the report, IDC estimates that \$901 billion was spent worldwide on mobile technologies in 2014. Wireless data and smartphones comprised the lion's share of this spending. The opportunity is forecast to reach \$1.2 trillion by 2019. Excluding consumer spending, the industries expected to spend the most for mobile technologies include discrete and process manufacturing and professional services. Combined, these three segments will represent 17% of the market in 2019. The areas of greatest growth include personal and consumer services, media, and the banking industries. "More than ever, mobile technologies are empowering workers across industries to connect, collaborate, and create new ways to operate and do business," said Jessica Goepfert, Program Director of IDC's Global Technology and Industry Research Organization. "It goes beyond providing a smartphone to liberate the deskbound worker. Instead, it's about utilizing mobile technology to increase sales, improve productivity, and raise customer and employee satisfaction."

## Huawei, DOCOMO conduct field trial of 5G new radio access technologies

Chinese equipment vendor Huawei has claimed the world's first successful large-scale field trial of 5G new radio access technologies, in cooperation with NTT DOCOMO, Japan's largest mobile network operator by subscribers. The two companies announced their partnership on joint trials of the new air-interface technologies for 5G in March 2015. The field trial, which took place at an outdoor test site at Chengdu in China, represents the first large-scale Multi-User MIMO (MU-MIMO) technology test with a concurrent connectivity of 24 user devices in the macro-cell environment on the sub-6GHz frequency band. Huawei claims it is also the first time to validate the performance of Sparse Code Multiple Access (SCMA) and Filtered OFDM (F-OFDM) in the field, both of which are 5G new air interface technologies proposed by Huawei. 'This joint field trial represents a significant advance toward fulfilling Huawei's commitment to developing 5G technology standards before 2018,' commented Dr. Wen Tong, CTO of Huawei Wireless Networks, adding: 'Results like these show we are making rapid progress and are on the right path. I am confident that what we have learned here will be reflected in even more innovative technological advances as

we continue working on 5G research.' Huawei plans to launch the first 5G pilot networks with its partners in 2018, and aims to contribute to the 5G industry ecosystem to complete interoperability testing in 2019, before commercially launching 5G networks in 2020.

## Cisco researchers disable big distributor of 'ransomware'

Cisco Systems Inc said it had managed to disrupt the spread of one of the most pernicious systems for infecting Internet users with malicious software such as so-called ransomware, which demands payment for decrypting users' data. The investigators from Cisco's Talos security unit were looking at the Angler Exploit Kit, which analysts at several companies say has been the most effective of several kits at capturing control of personal computers in the past year, infecting up to 40 percent of those it targeted.

They found that about half of computers infected with Angler were connecting to servers at a hosting provider in Dallas, which had been hired by criminals with stolen credit cards. The provider, Limestone Networks, pulled the plug on the servers and turned over data that helped show how Angler worked.



The research effort, aided by carrier Level 3 Communications, allowed Cisco to copy the authentication protocols the Angler criminals use to interact with their prey. Knowing these protocols will allow security companies to cut off infected computers. "It's going to be really damaging to the attacker's network," Talos manager Craig Williams told Reuters ahead of the release of the report. Cisco said that since Limestone pulled the plug on the servers, new Angler infections had fallen off dramatically. Limestone's client relations manager told Reuters his company had unwittingly helped the spread of Angler before the Cisco investigation. Often sold in clandestine Internet forums or in one-to-one deals, exploit kits combine many small programs that take advantage of flaws in Web browsers and other common pieces of software. Buyers of those kits must also arrange a way to reach their targets, typically by sending spoof emails, hacking into websites or distributing malicious advertisements. Once they win control of a target's computer, exploit kit buyers can install whatever they want, including so-called ransomware. This includes a number of branded programs, also sold online, that encrypt users' computer files and demand payment to release them. Talos estimated that if three percent of infected users paid the ransom averaging \$300, the criminals that had used the Limestone servers to spread Angler could have made about \$30 million a year.

## M2M retail sector analyzed in latest industry research

A report from Research and Markets has assessed the retail sector for machine to machine (M2M) communications and argues the market for wirelessly connected point of sale (POS) and multi-space parking meters are among the most advanced aspects in the space. According to Berg Insight, the number of cellular M2M connections in the retail industry will rise to 44.3 million by 2019, up from 23.1 million in 2014 at a compound annual growth rate (CAGR) of 13.9%. Wireless M2M communication technology is witnessing robust adoption in the retail sector in the spheres of POS terminals and on-street parking solutions. The multi-space parking meter segment boasts

the highest amount of penetration, at over 50%, and it was among the first vertical markets to adopt cellular M2M connectivity. The single-space parking meters market is among the segments that is growing at the most rapid pace on account of increased adoption in recent years. Meanwhile, the wirelessly connected POS terminals market is comparatively more mature than others and most of the market growth is on account of growing adoption of electronic payments in emerging markets. The report delves into the potential market size for wireless M2M communication in the retail industry, important applications that provide adequate business potential and trends and developments impacting each vertical market segment. It also covers the foremost players of vending telemetry solutions, insight into how the market for wireless ATM connectivity solutions is growing, the foremost players offering connected parking meters, the number of connected digital signs across the globe while providing a region-wise breakdown of the attach rate for cellular connectivity in POS terminals, and insight into the development of the market for public transport fare collection systems.

## ETSI's Mobile Edge Computing Initiative Explained

ETSI has published a white paper on Mobile Edge Computing, a key emerging technology which is considered to be an important component of future generation networks, including 5G. Mobile Edge Computing is an IT service environment and cloud computing capabilities located at the edge of the mobile network, within the Radio Access Network and in close proximity to mobile subscribers. As telecom operators are facing new challenges with ever growing mobile traffic and continued cost pressure, there is a clear need to improve the end user quality of experience, generate revenue, and optimize network operations. The Internet of Things is predicted to further congest networks. Application and content providers are challenged with the latency of the network when connecting to the cloud. Enterprises want the ability to engage with their customers with more efficient, secure and low latency connections. Mobile

Edge Computing (MEC) can bring solutions to many of these issues. This White Paper outlines how Mobile Edge Computing is characterized by low latency, proximity, high bandwidth and real-time insight into radio network information and location awareness. It provides examples of how applications such as connected vehicles, e-Health, industry automation, augmented reality, intelligent video acceleration, gaming and IoT services can each benefit from Mobile Edge Computing. ETSI has established an Industry Specification Group on Mobile Edge Computing (ISG MEC), to develop a standardized, open environment that will allow efficient and seamless integration of third-party applications across multi-vendor platforms. The group, which started work in December 2014, is developing terminology, service scenarios, technical requirements (including use cases and their benefits) and a framework and reference architecture. When the first documents reach maturity, work on platform services, APIs and interfaces will begin. Mrs. Nurit Sprecher of Nokia, chairman of MEC ISG, commented: "I truly believe that Mobile Edge Computing technology can stimulate innovation and enable a myriad of new use cases across multiple sectors that can take the mobile broadband experience to a completely new level, bringing benefits for all stakeholders and consumers." The group has released its Proof of Concept (PoC) framework specification. Proofs of Concept are essential to demonstrate Mobile Edge Computing as feasible and valuable, to validate the specifications that are being developed, to reduce time to market, to demonstrate use cases, and ultimately to help develop a diverse and open MEC ecosystem.



## TD-LTE is deployed more often in emerging markets than in developed markets

413 commercial LTE networks were launched worldwide by the end of 2Q 2015, according to Analysys Mason's recently updated FD-LTE accounts for 348 (or 84%) of them, while TD-LTE accounts for only 55 (or 13%). It is not clear which duplexing technology – FD or TD – has been used for the remaining 10 launches (or 2%).

TD-LTE has been deployed more widely than FD-LTE in emerging markets, compared with its deployment in developed markets. This is partly because TD-LTE is more suitable than FD-LTE for broadband wireless access (BWA), which is in strong demand in emerging regions. The relatively low level of deployment of TD-LTE in developed regions such as Europe suggests that a 'spectrum crunch' either does not exist in these areas or has been mitigated by the release of substantial amounts of paired spectrum by national regulatory authorities (NRAs) to operators, including licences for the use of 700MHz and 800MHz digital dividend licences. In this comment, we focus on the reasons why there is an unequal distribution of TD-LTE network launches worldwide.

**TD-LTE has enjoyed wider deployment than FD-LTE in emerging markets, where BWA is an attractive option**

TD-LTE networks have commanded a greater share of LTE network launches in emerging regions compared with developed regions (see Figure 1).

BWA is an attractive technology option for operators in countries (particularly those in emerging regions) where wired access networks are either unavailable or unreliable. WiMAX technology was often deployed in the 2000s in order to provide BWA in emerging regions, but waning vendor, operator and consumer interest in this technology has prompted operators to reassess the future of their WiMAX networks.

Operators consider TD-LTE to be an attractive BWA replacement for WiMAX because:

- most WiMAX deployments use unpaired, TD spectrum in the 2.5GHz and 3.5GHz bands, and these bands have since been designated by the



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Analyst  
Analysys Mason

- 3GPP as being suitable for TD-LTE
- TD-LTE is 'future-proof' – it has a reasonably long evolution roadmap and should remain a relevant and supported technology throughout the next decade
- TD-LTE enables operators to reserve paired FD spectrum for mobile services, which mitigates against congestion in the spectrum from fixed-mobile substitution usage profiles.

In particular, there has been a series of spectrum licence auctions in Europe during the past 5 years. NRAs in Europe have awarded unpaired spectrum licences to 21 operators, according to our recently published Spectrum auction tracker. However, none of them has launched a TD-LTE network yet (see Figure 2).

- Operators are focused on securing wide LTE coverage by deploying low-frequency FD-LTE networks. The European telecoms

spectrum available to operators is high frequency (supra-2GHz).

Weak wireless data traffic growth in Europe has discouraged investment in TD-LTE networks. Europe recorded the lowest annual mobile data traffic growth rates in 2013 of any region – 48% in Central and Eastern Europe, and 54% in Western Europe – compared with a worldwide average of 78%, as reported in Analysys Mason's Wireless network traffic worldwide: forecasts and analysis 2014–2019. Although TD-LTE deployments can add generous capacity to operators' networks (thanks to the large tracts of spectrum that are typical of high-frequency unpaired spectrum licences), the relatively low number of TD-LTE deployments in the region suggests that networks in Europe are not congested enough to motivate operators to invest in deploying these types of network.

Wireless broadband consumers in Europe mainly use mobile broadband rather than BWA. Fixed networks are adequate in most developed countries, and as a result, this weakens demand for BWA. Consequently, operators are focused on optimising their networks for handset users. For example, the iPhone is a popular handset in this region, but it only achieved TD-LTE support in its European variant for its latest iteration (iPhone 6/6+), which was launched in 3Q 2014.

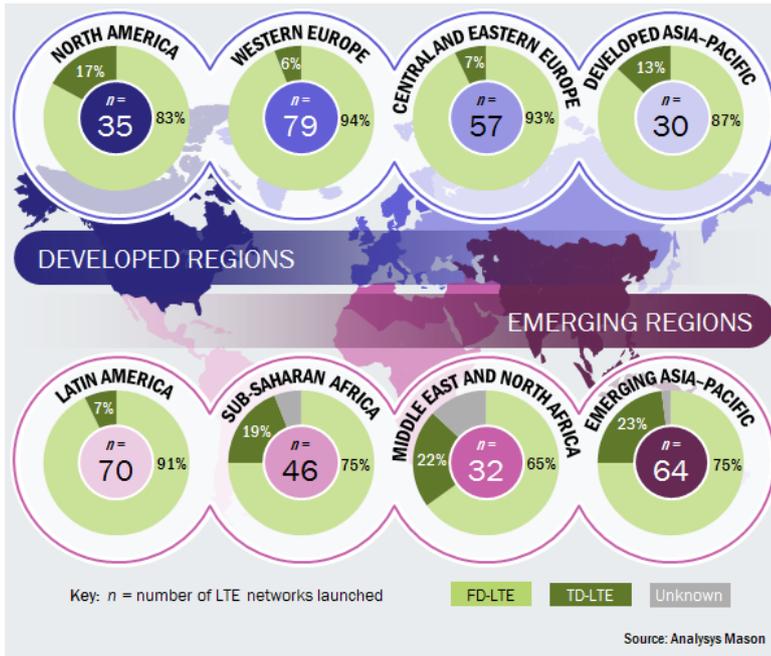


Figure 1: LTE network launches by duplex type and region, 2Q 2015

**Low TD-LTE deployment in developed regions suggests that there are no spectrum shortages or they have been eased**

TD-LTE has not been widely deployed in developed regions – despite much speculation within the wireless industry during the past decade that a 'spectrum crunch' was inevitable. This seemed likely because mobile network operators' (MNOs') spectrum assignments were not able to adequately meet the increasing consumer demand for mobile broadband data. However, national regulators have addressed these concerns by awarding MNOs with more spectrum licences for the use of both paired and unpaired spectrum.

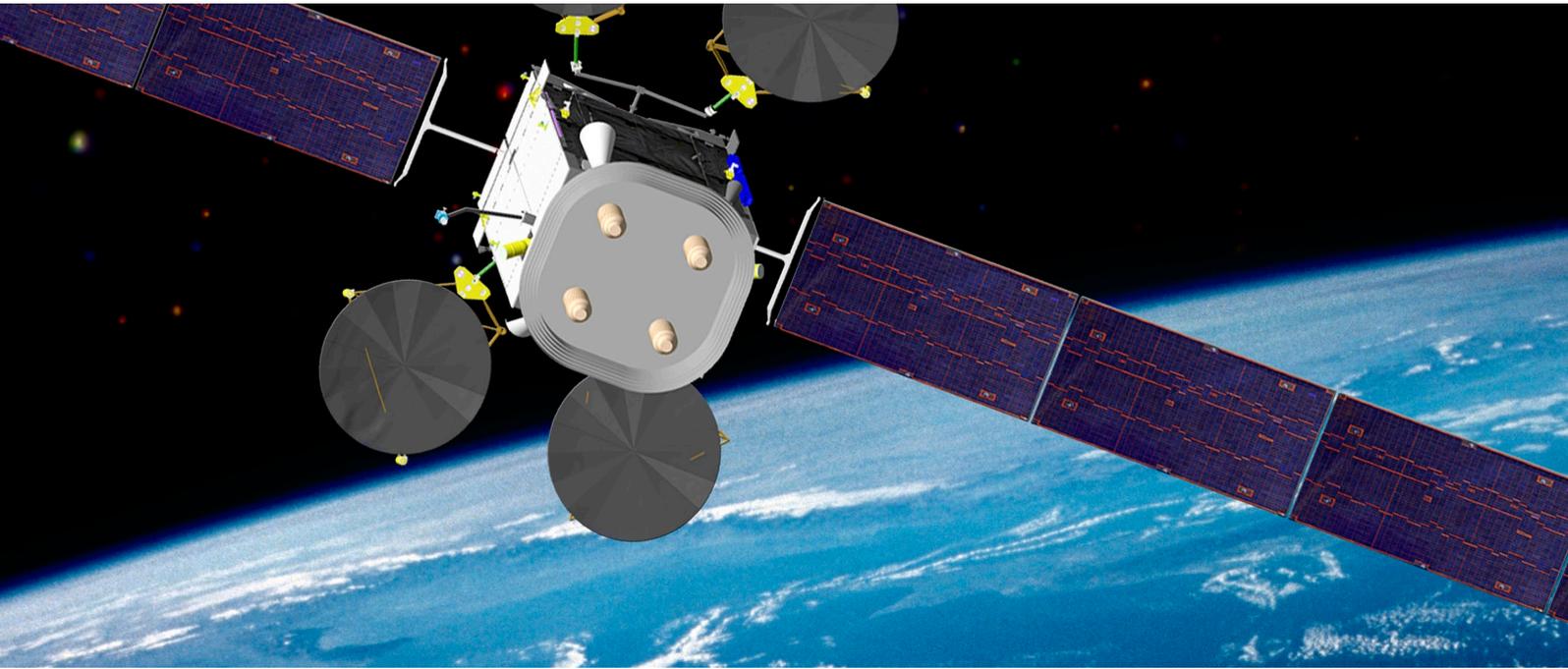
market is fiercely competitive. Much of the paired low-frequency (sub-1GHz) and mid-frequency (sub-2GHz) spectrum has been auctioned and refarmed in Europe in the past 5 years. Operators have focused on deploying FD-LTE networks using that spectrum, which ensures that wide coverage can be achieved quickly. In comparison, the unpaired

Country	Auction date	Unpaired spectrum offered (GHz)	Number of operators awarded unpaired spectrum licences	Number of TD-LTE networks launched by unpaired spectrum licence winners
Denmark	2Q 2010	2.6	3	0
Italy	3Q 2011	2.6	1	0
Spain	3Q 2011	2.6	0	0
Belgium	4Q 2011	2.6	1	0
Portugal	4Q 2011	2.6	1	0
Latvia	1Q 2012	2.6	0	0
Switzerland	1Q 2012	2.1, 2.6	1	0
Romania	3Q 2012	2.6	2	0
Netherlands	4Q 2012	2.1, 2.6	4	0
UK	1Q 2013	2.6	2	0
Slovakia	1Q 2014	2.6	1	0
Slovenia	2Q 2014	2.1, 2.6	2	0
Hungary	3Q 2014	2.6	1	0
Greece	4Q 2014	2.6	2	0

Source: Analysys Mason

Figure 2: Summary of spectrum licence auctions in Europe in which unpaired spectrum was offered to operators, 2010–2015

<sup>1</sup> See [Analysys Mason's Analyst view: TD-LTE is the future for TD-SCDMA and WiMAX operators like China Mobile and Sprint](#)



## ▼ SATELLITE NEWS

### SATELLITE UPDATES

#### Eutelsat Orders Europe's First Spacebus Neo HTS Satellite from Thales Alenia Space

Eutelsat announced an agreement with Thales Alenia Space for a new High Throughput Satellite (HTS) based on the Spacebus Neo platform. The all-electric satellite is planned for launch in 2019, where it will provide broadband to users in Africa. The baseline mission of the new satellite is to provide 75 Gbps of capacity across a network of 65 spot beams that together provide quasi-complete coverage of Sub-Saharan Africa. The satellite will address direct-to-user consumer and enterprise broadband services. It will also be used for community networks connected to Wi-Fi hotspots, mobile phone backhauling, and rural connectivity. Thales Alenia Space developed the Spacebus Neo in partnership with the European and French space agencies. In the coming months, Eutelsat has the option to upscale the satellite to significantly increase overall throughput and service areas. Eutelsat's African broadband business, including sales, will be managed by a newly created London-based affiliate. The new satellite follows a recent agreement to provide high throughput connectivity to Africa with Facebook on Spacecom's Amos 6 satellite.

#### Ohio State to Lead NASA Radio Interference CubeSat Mission

NASA has selected the Chair and Professor of Ohio State's Department of Electrical and Computer Engineering Joel Johnson to lead an agency program to help mitigate the impact of manmade Radio Frequency Interference (RFI). The agency awarded the university \$5.6 million for the CubeSat Radiometer RFI Technology Validation (CubeRRT) mission, which aims to demonstrate RFI technologies for Earth-sensing microwave radiometers, enabling scientists to remotely sense global properties such as soil moisture, atmospheric water vapor, sea surface temperature and sea surface winds. "Successful RFI mitigation by CubeRRT will not only improve the possibility of microwave radiometry in an RFI intensive environment, but may also allow future systems to operate over a larger bandwidth resulting in lower measurement noise," said Johnson. Ohio State, one of the four selected projects, is working in partnership with investigators from NASA Jet Propulsion Laboratory and NASA Goddard Space Flight Center. The academic institution is the only national university leading a team for NASA's In-Space Validation of Earth Science Technologies (INVEST) program. Johnson's Ohio State team has focused on detecting and discarding manmade RFI

from the Earth's naturally fluctuating microwave signals since 2001. The team's RFI system will fly in space as part of a 6U CubeSat measuring 20 cm by 30 cm by 10 cm, with a potential launch date in 2018

## Boeing Wins Silkwave 1 Satellite Contract for Telecommunications in Asia

Boeing has received a satellite order from New York Broadband (NYBB) to construct a satellite on its Boeing 702 platform to serve mobile users in China, India and other Asian markets. Denver, Colo.-based NYBB, which owns 12 Ultra-High Frequency (UHF) channels in the U.S., is procuring the satellite and will lease capacity to CMMB Vision. Located in Hong Kong, CMMB Vision plans to use the satellite to provide a comprehensive suite of media and information services to Asian customers. CMMB Vision is planning a new service in Asia based on "Converged Mobile Media Broadcasting," the mobile handheld TV technology standard in China. Silkwave 1 will eventually take the 105 degrees east-orbital slot currently occupied by NYBB's AsiaStar spacecraft, along with its L-band spectrum rights. Silkwave 1 will offer 100 times greater transmission power than the spacecraft that it will replace. The new satellite will be based on a variant of the Boeing 702 platform with solar cells generating 14 Kw of power and carrying a 9-meter reflector. The launch is planned for 2018, and NYBB will decide on the provider. "With this new Boeing satellite, Silkwave 1, we will realize a vision to deliver quality multimedia capabilities to the consumer on the move," said Charles Wong, chairman and CEO of CMMB Vision. "Video, voice, data and other new digital media will become more readily available than ever before along the Silk Road of Asia, one of the most historically significant routes for commerce in the world."

## US Army Awards TeleCommunication Systems \$5 Million for Additional VSATs

TeleCommunication Systems (TCS) has received \$5 million in incremental

funding from the U.S. Army for sustainment of the AN/TSC-198A SNAP (Secret Internet Protocol Router (SIPR) and Non-classified Internet Protocol Router (NIPR) Access Point) Very Small Aperture Terminals (VSATs). Ruggedized and designed for transport, the TCS SNAP VSATs provide secure communications for voice, video and data. Combined with the initial funded contract value of \$18.6 million, this brings funding to date to \$23.6 million. The ceiling contract value, including funded and unfunded amounts, is nearly \$91 million through September 2018, if the Army exercises all options.

## EightyLEO Details Vision for IoT SmallSat Constellation

German entrepreneur Matthias Spott is developing a European network of small communications satellites in Low Earth Orbit (LEO) using a revamped constellation project from the 1990s. The company, called eightyLEO, is seeking to galvanize the space industry throughout Europe to build and deploy the constellation with an intense focus on end user applications in the commercial sector. Spott founded eightyLEO in early 2015 as a vehicle to resurrect a German-based company that was working on a "world phone constellation" since the 1990s, similar to that of Iridium and Globalstar. The original company filed with the International Telecommunications Union (ITU) for spectrum, but never acquired the funding to orbit the constellation. In an interview with Via Satellite, Spott said this company, codenamed "Diamond" to honor Non-Disclosure Agreements (NDAs), had valuable assets that can still be used today to form a commercially competitive satellite network in space. EightyLEO jumpstarted the program this year, and originally found an investor who was willing to finance the purchase of Diamond's shares along with six months support to modernize the effort. Diamond's most valuable asset was its access to spectrum at a time when, according to Spott, other LEO satcom programs lacked this resource. However, the existing shareholder failed to complete the ITU's regulatory process by filing a Coordination Request (CR) with the ITU. Nonetheless, eightyLEO still saw value in the technology from

Diamond, and though no longer buying the company, is seeking to give the idea a fresh start. "They had some good assets," said Spott. "The general architecture of the constellation, the technology they always kept up to date. It was state of the art." EightyLEO joins other LEO communications projects such as OneWeb, SpaceX and LeoSat in the resurgence of enthusiasm around providing connectivity from Non-Geostationary Orbits (NGSO). Spott said eightyLEO is carefully reevaluating the architecture for the constellation, with hopes of launching test satellites in the second half of 2016. EightyLEO still has access to technology from Diamond through key personnel in the extended project network.

## APT Satellite Launches Apstar 9, orders Apstar 6C from CAST

APT Satellite launched Apstar 9, its replacement satellite for Apstar 9A, on October 17 aboard a Long March 3B/E rocket. Apstar 9 is based on China Great Wall Industry Corp's (CGWIC) DFH-4 series platform and carries 39.5 C-band 36 MHz Transponder Equivalents (TPE) and 21 Ku-band TPEs. The spacecraft's C-band payloads cover the Asia Pacific and South East Asia, while its Ku-band footprint stretches from the East Indian Ocean to the West Pacific Ocean, targeting In-Flight Connectivity (IFC) and maritime broadband verticals. Immediately following the launch, APT Satellite entered a contract with CGWIC for Apstar 6C. Also based on the DFH-4 platform, Apstar 6C will be equipped with 45 transponders in C, Ku, and Ka bands, with a design service life of



15 years. Apstar 6C is a replacement satellite for Apstar 6, which launched in 2005, and is also able to serve as a backup plan for other under-planning Apstar satellite programs. The satellite is being designed for high-power

transponder services to customers across the Asia-Pacific region such as VSAT, video distribution, DTH television and cellular backhaul.

## Yahsat orders Newtec Dialog Multiservice VSAT Platform for Brazil

UAE-based satellite operator Yahsat, has awarded a new contract to Newtec for its Newtec Dialog multiservice VSAT platform, including VSAT baseband hubs, user terminals, and the Operating Support System (OSS) and Business Support System (BSS). The contract also caters for the supply of various types of Customer Premise Equipment (CPE). The turnkey solution provided by Newtec, in partnership with Tech Mahindra, is integrated with an Oracle platform to strengthen the OSS/BSS layer. Tech Mahindra has more than 20 years of experience in delivering OSS/BSS solutions to global telecom operators and has a strong presence in Brazil. Yahsat's third satellite, Al Yah 3, is scheduled for service launch in early 2017, extending the company's commercial Ka-band coverage to an additional 19 countries and 600 million users across Brazil and Africa. Al Yah 3 will cover more than 95 percent of Brazil's population. This latest partnership is in preparation for these developments, and is in line with Yahsat's strategy to appeal to wider demographics in the markets in which it operates. While Newtec is the preferred partner for the Brazilian market, the Newtec platform may also be deployed in other territories across Yahsat's footprint. "This latest contract award to Newtec signifies the first time a satellite operator is set to integrate a fully-fledged OSS/BSS into the VSAT service platform for both wholesale and consumer segments. By doing so, we are extending our service offering and ensuring a high level of customer experience for all," said David Murphy, Yahsat's Chief Commercial Officer (CCO).

## Norsat Receives \$2.7 Million Military Contract for Maritime VSATs

A U.S. military contractor has awarded Norsat International a \$2.7million contract for its Ku-band and Wideband Global Satcom (WGS)-certified

X-band marine VSAT terminals. Under the agreement, Norsat will supply its MarineLink COM12 1.2m and MarineLink COM15X 1.5m dual antenna maritime VSAT terminals for seafaring vessels, including naval ships. Additionally, Norsat's proprietary Low Noise Block (LNB) downconverters and Atom Block Upconverters (BUC) will be integrated into the MarineLink terminals. Both the COM12 and COM15X include Norsat's latest technical upgrades such as heavy-duty industrial grade motors, advanced high-speed acceleration and braking, high gain and low-loss antenna and RF filter chain, and conformance to military standards for high impact shock, vibration, and Electromagnetic Compatibility (MIL-STD-901D, MIL-STD-167, MIL-STD-461 for EMC). In addition, the COM15X will be officially going through Army Force Strategic Command's (ARSTRAT) WGS certification process. WGS certification gives the COM15X permission to operate on the high-capacity WGS satellite constellation controlled and operated by the U.S. government. Due to ARSTRAT's WGS certification timing requirements, Norsat expects to begin MarineLink terminal deliveries during the fourth quarter of 2016

## Bangladesh's Bangabandhu satellite may miss deadline

The launch of Bangladesh's first satellite is facing a setback due to delays in awarding related jobs after the original deadline to complete the project expired in June. The government now has a plan to launch the satellite -- Bangabandhu-1, meant for communication and broadcast services -- on December 16, 2017 and use the following six to eight months to fine-tune its orbital position. Bangladesh bought the orbital slot from Intersputnik, a Russian satellite company, for \$28 million early this year, and the purchase contract mandates launch of the satellite by June 2018. If delayed, both money and the orbit will be forfeited. If launched in time, the orbit will remain valid for fifteen years, after which, the deal will have to be renewed. The foreign companies that have participated in the bidding are of the opinion that there is not enough time left to install and launch a commercial satellite for an inexperienced country like

Bangladesh. A bidder said, even if the work order is given now, it will take at least 26 months to launch the satellite. But project officials remain confident. "Though we are not on schedule, we are confident that we can complete everything according to plan," said Md Golam Razzaque, the project director of the Bangabandhu-1 satellite. On June 18, Bangladesh Telecommunication Regulatory Commission received bids from four companies -- France's Thales Alenia Space, China's Great Wall Industry Corporation, USA's Orbit ATA and Canada's MDA. Work orders were supposed to be given by the first week of September, but the evaluation committee is yet to do so. To approve any bid, the technical evaluation committee first needs to present its report to the line ministry, which will then recommend it to the government's purchase committee. Next, it will await prime minister's approval before the work orders can be awarded to any bidder. The proposal will need Prime Minister Sheikh Hasina's approval twice, both before and after the purchase committee's nod, as she is also the minister for posts, telecommunication and ICT, officials working on the project said. The project implementation committee has already extended the tender validation date to November 30, from the previously fixed date of October 15, a top executive of a bidder company said. "The date will need to be extended further." Officials of the project implementation committee have also voiced concern about meeting the deadline, especially because the decision is complex as three of the four bidders do not even have their own launching pads. The satellite is so far the most sophisticated technological project undertaken by Bangladesh, worth about Tk 2,967.96 crore. Of the amount, some Tk 1,652.44 crore will be from foreign loans and the government will supply Tk 1,315.51 crore. Of the loans, 85 percent will have to be brought in by the winning bidder. All the bidders agree that it will be difficult to launch the satellite in time. "None can maintain the December 2017 deadline under the current circumstances," said Zakir Hossen, a local consultant of the Great Wall Industry Corporation. "Only Great Wall has a chance of meeting the deadline as we have our own launching pad," he said. Great Wall is currently the fourth choice out of the bidders, as it has the highest stipulated costs, and MDA is the first choice

for its lowest bid of \$222.75 million, officials said. Thales Alenia Space of France is the second lowest bidder with \$248 million. However, financial aspects are not the only criteria to select the best bidder, as the technical sides also have to be considered, officials said. Currently Bangladesh's satellite-related needs are met by renting bandwidth from different operators, for almost \$14 million a year, with the costs increasing every year. Once launched, Bangabandhu-1 will save this annual cost, and bring in foreign currency by leasing out half its capacity to Saarc nations, as well as countries like Indonesia, the Philippines, Turkmenistan, Kyrgyzstan and Tajikistan, if the frequencies are properly coordinated. The telecom regulator hopes to break even in seven years. The satellite will narrow the digital divide, as it will help take broadcast and telecom services to rural areas, and allow the launch of some lucrative ventures like direct-to-home services throughout the country

## Satellite operators sign Crisis Connectivity Charter

In the past year alone, global natural disasters including in Vanuatu, Nepal and the Philippines demonstrated the critical role of communications in the wake of crises. The satellite sector is systematically part of the first responder team, providing immediate communications links that support supply logistics, urgent medical care and coordination of relief efforts. At the World Humanitarian Summit Global Consultation held in Geneva, the world's leading satellite operators, Eutelsat, Hispasat, Inmarsat, Intelsat, SES, Thuraya and Yahsat, under the umbrella of the EMEA Satellite Operators Association (ESOA) and the

Global VSAT Forum (GVF), announced the signing of a Crisis Connectivity Charter with the global humanitarian community represented by the UN Office for the Coordination of Humanitarian Affairs (OCHA) and the Emergency Telecommunications Cluster (ETC). Embodying a commitment from the satellite community to enhance connectivity in humanitarian emergencies, the Charter formalizes terms and protocols designed to accelerate the ability of emergency response teams to access satellite-based communications when local networks are affected, destroyed or overloaded after a disaster. The principles of the Charter also include increased coordination to prioritize access to bandwidth for humanitarian purposes during disaster operations, pre-positioned satellite equipment and transmission capacity at times of disaster in 20 high-risk countries in Europe, the Middle-East, Africa and Asia, as identified by the ETC and beyond, as well as training and capacity building for the humanitarian community across all five continents. Aarti Holla, Secretary General of ESOA: "ESOA is honored to have led this effort on behalf of member satellite operators who collectively deliver global coverage and connectivity. We have to recognize that number of crises around the world is increasing both as a result of climate change and geo-politics. As a result, the unique ability of satellite solutions to help save lives is becoming indispensable and the Charter will enable the ETC to trigger pre-positioned satellite solutions in any one of their 20 high-risk countries or beyond." Signing the Charter on behalf of UN OCHA, Stephen O'Brien, UN Under-Secretary General for Humanitarian Affairs and the UN's Emergency Relief Coordinator said: "The humanitarian community relies on satellite communications as they are the only technology that are immune to natural disasters and that can be immediately deployed, regardless of constraints such as geography. This is a significant step for the humanitarian community and a step change in the way we have worked with satellite operators in the past." Chair of the ETC and Chief Information Officer of the World Food Program (WFP), Jakob Kern, noted: "The Charter seeks to ensure improved access to communications services in humanitarian emergencies, and with satellite services we can save lives. Through the Crisis Connectivity Charter

and the ETC network, we Endeavour to ensure that by 2020 all those responding to disasters, including affected people, can communicate to respond, recover and redevelop. Mobilizing their members in this way, ESOA and GVF are supporting the ETC in making this vision a reality." Signing for GVF, David Hartshorn, Secretary General noted: "Our members provide emergency communications on all continents using key satellite spectrum such as the C-band. We hope governments and administrations the world over will recognize the vital role satellite operators play in the globe's telecommunications infrastructure and its ability to ensure an immediate, robust and resilient response to disasters."

## 7 Satellite Operators Sign UN's Crisis Communications Charter

Eutelsat, Hispasat, Inmarsat, Intelsat, SES, Thuraya and Yahsat, under the umbrella of the EMEA Satellite Operators Association (ESOA) and the Global VSAT Forum (GVF), signed a Crisis Connectivity Charter with the global humanitarian community represented by the UN Office for the Coordination of Humanitarian Affairs (OCHA) and the Emergency Telecommunications Cluster (ETC). The charter formalizes terms and protocols designed to accelerate the ability of emergency response teams to access satellite-based communications when local networks are affected, destroyed or overloaded after a disaster. The principles of the charter also include increased coordination to prioritize access to bandwidth for humanitarian purposes during disaster operations, pre-positioned satellite equipment and transmission capacity at times of disaster in 20 high-risk countries in Europe, the Middle-East, Africa and Asia, as identified by the ETC and beyond. Operators will also boost training and capacity building for the humanitarian community around the world. "The charter seeks to ensure improved access to communications services in humanitarian emergencies, and with satellite services we can save lives. Through the Crisis Connectivity Charter and the ETC network, we endeavor to ensure that by 2020 all those responding to disasters, including affected people, can communicate to respond, recover



and redevelop. By mobilizing their members in this way, ESOA and GVF are supporting the ETC in making this vision a reality," said Jakob Kern, chair of the ETC and chief information officer of the World Food Programme (WFP).

## Ericsson Signs First Managed Rural Coverage deal with MTN Benin

Ericsson, with customer MTN, has reached its first Managed Rural Coverage deal to bring mobile coverage as a service to parts of central and northern Benin where there was none previously. Managed Rural Coverage is a cost-competitive solution whereby Ericsson enables operators to provide mobile coverage for a set period according to service level agreements and defined key performance indicators. In this case, Ericsson and MTN Benin have signed an agreement for five years. Under the terms of this contract, customers will gain access through Ericsson's low-power consumption radio base stations running on solar energy to avoid the high costs and emissions associated with diesel generators. Satellite will enable transmissions to avoid the high costs and civil works associated with building a microwave backhaul network in remote villages. According to Ericsson, this makes it possible to create a business model to provide mobile coverage to parts of Benin where people have to survive on less than two dollars a day.

## APT Satellite Interested in More High Throughput Satellites

BHong Kong-based satellite operator APT Satellite wants to include higher throughput payloads on future satellites and sees mobility markets growing in importance. The company currently operates a fleet of five satellites, and has a sixth, Apstar 9, slated to launch Oct. 17 from China's Xichang Satellite Launch Center. Apstar 9 supports C- and Ku-band payloads, including a high-powered steerable spot beam for Direct-to-Home (DTH) television and data transmission over Papua New Guinea, the Philippines, Southeast Asia, Mongolia and other regions. Huang Baozhong, EVP of APT

Satellite, told Via Satellite that the operator has more spacecraft planned and is interested in having High Throughput Satellite (HTS) capabilities on many of them. "We have plans for additional spacecraft beyond Apstar 9 and the Apstar 5 replacement," he said. "Details of the future satellite are still to be finalized, but one thing is for sure: we will have also HTS payload in the future satellites." Apstar 5, also known as Telstar 18, is a joint spacecraft with Telesat of Canada. Baozhong said APT Satellite is currently working with Telesat on designing the replacement satellite. Telesat said earlier this year that it anticipates placing an order for the replacement satellite by the end of the year, and that the company is also considering high throughput capabilities. HTS is on the rise in Asia, as many operators consider leveraging advanced satellites. Australia's NBN Co recently launched the first of two HTS satellites last month and China Satcom ordered equipment for its first HTS satellite, ChinaSat 16 in August. More operators, such as Intelsat, Eutelsat, O3b and ABS, along with newcomer Kacific, are all planning for HTS capacity in the region as well. Research firm NSR forecasts geostationary HTS will bring roughly 300 Gbps of HTS supply to Asia by 2020 in one of its latest reports. Apstar 9's C-band payload will mainly serve South East Asia, while the four Ku-band beams target multiple verticals, with maritime being a large focus. Baozhong said the Ku beams cover almost the whole South Pacific region and part of the Indian Ocean, where APT Satellite sees the busiest routes for ships and aircraft, leading to "huge growth potential," for aviation and maritime, he said. China Eastern Airlines demoed In-Flight Connectivity (IFC) with APT Satellite last year, and Baozhong said he anticipates it is only a matter of time before all airlines start providing passenger connectivity. In September APT Satellite signed a capacity agreement with Sinosat and Shenzhen Marinesat on Apstar 9 focusing on the maritime market. The Asia Pacific is a strong market for video broadcasting as well, with Japan and South Korea among the leaders in 4K Ultra-HD. China leads the world in the number of 4K televisions sold, however, Baozhong does not expect this to lead to 4K broadcasts anytime soon. "China will first complete its transition from SD to HD, which will take very long, before it starts commercial 4K broadcasts," he said.

David Watkins, director of connected home devices at Strategy Analytics, confirmed this point. "China is still the leading market having accounted for 70 percent of global [4K TV] shipments in 2014 and we forecast it will account for 56 percent in 2015. We forecast shipments in China of 15.4 million units in 2015 up from 8.5 million in 2014, Watkins told Via Satellite, adding that the research firm is not aware of much, if any, 4K content activity in China. "From the streaming side 4K is a non-starter in China," he said. "With an average broadband speed of 3.7 Mbps (source: Akamai State of the Internet Report) there is no way you can stream 4K in China, and we are not seeing anything from traditional broadcasters." Watkins said Japan and South Korea, which have more traction toward Ultra-HD, have the highest penetration of 4K TV sales outside of China. Strategy Analytics forecasts 4K to account for 11 percent of total TV sales in each country in 2015. Watkins linked most 4K to Over-the-Top (OTT) services, and that, said outside of South Korea and Japan, most places have insufficient bandwidth to support such services. This could present an opportunity for satellite operators, as a lack of terrestrial telecommunication infrastructure often translates to greater demand for satellite. Japan's B-SAT is preparing for 4K and 8K with its newest satellite, and Watkins noted South Korean satellite broadcaster KT Skylife has launched three 24-hour 4K channels. In India, satellite broadcasters Tata Sky and Videocon have also launched 4K services with a single channel each, he said. Though much of APT Satellite's revenue comes from the Asia-Pacific, the company's fleet covers 75 percent of the world's population. Compared to the first half of last year, APT Satellite's profit increased by 9.6 percent during the first half of 2015, despite increased competition in its core market. Baozhong said that APT Satellite considers itself a global operator, though one region of the world remains beyond its coverage. Future satellites could change that. "Currently APT Satellite's revenue is mainly from the Asia Pacific — including Australia and New Zealand — South Asia, Southeast Asia, Middle East, North America, Africa and Europe. Therefore, we are already a truly global satellite operator. However, geographically we do not have capacity covering the American continent yet and maybe

it is desirable to have capacity that is able to serve this region but we do not have concrete plan yet," he said.

## Eusanet, Eutelsat Roll Out Satellite Wi-Fi Solution in Germany

German satellite broadband company Eusanet and Eutelsat have joined forces to deliver a new broadband solution that combines satellite Internet with Wi-Fi networks. The new solution enables broadband without large-scale construction work in regions with limited or no Asymmetric Digital Subscriber Line (ADSL) infrastructure. Eusanet and Eutelsat first deployed the satellite-Wi-Fi solution in the Black Forest community of Oberried/St. Wilhelm at the end of September. The network combines Eutelsat's High Throughput Satellite (HTS) KA-SAT with a high-speed wireless network. This combined solution currently delivers download speeds of up to 30 Mbps and uplink speeds of up to 5 Mbps per household, with room for upgrades in the future. According to Eusanet, the solution can ultimately deliver download speeds of up to 100 Mbps to individuals in communities of several hundred homes. The service requires a 12cm external antenna to access Eusanet broadband. At the heart of the community solution are satellite dishes with reception and transmitting units connected to the Internet by KA-SAT. Based in the community are a server, router, satellite modems and modern wireless units. Three radio cells with a reach of several kilometers supply the households using free and public frequencies. Additional radio cells outside the community of St. Wilhelm are also under construction to extend the service. Additionally, the service includes Voice-over-IP (VOIP), and the first tests to supply households with TV over the same system are currently under way.

## NASA Confirms Operational Status of Laser Communications CubeSat

NASA and The Aerospace Corporation have received confirmation the Optical Communications and Sensor Demonstration (OCSD) CubeSat, launched Oct. 8 by an Atlas 5 rocket, is in orbit and operational. The OCSD



is testing a unique space-based laser communications system. The laser is hard-mounted to the spacecraft body, and the orientation of the CubeSat controls the direction of the beam. According to NASA, this makes the laser system more compact than anything previously flown in space. The CubeSat will evaluate the ability to point a small satellite accurately as it demonstrates data transfer by laser at rates of up to 200 Mbps. OCSD is the first in a new series of six NASA-managed technology demonstration missions set to launch during the coming months using CubeSats. The second OCSD mission, scheduled to launch no earlier than Feb. 1, will use two CubeSats to demonstrate the ability to maneuver small spacecraft in close proximity to one another using low-cost sensors and a propulsion system that uses water as a propellant. BridgeSat, a startup collaborating with NASA, The Aerospace Corporation and Draper Labs, is seeking to commercialize laser communications technology from the OCSD mission for a network of optical satellites and associated ground stations. "Technology demonstration missions like OCSD are driving exploration," said Steve Jurczyk, associate administrator for the Space Technology Mission Directorate (STMD) at NASA Headquarters in Washington, D.C. "By improving the communication capability of small spacecraft to support data-intensive science missions, OCSD will advance the potential to become a more viable option for mission planners."

## Reusability, Mass Production Top the List for SmallSat Launch Priorities

Emerging small satellite launch providers are eager to speed up the production of rockets and introduce

reusability in new launch systems. Speaking at the Hosted Payload and SmallSat Summit in Washington, D.C. on Oct. 8, executives from Virgin Galactic, Firefly Space Systems and the Defense Advanced Research Projects Agency (DARPA) all described rapid production and reusability as a must-haves to lower the cost of launch. "I think everyone can unanimously agree that costs are far too high in launch," said P.J. King, co-founder of Firefly. "There are many reasons for that, but if you are going to approach the problem of reducing cost, you've effectively got two ways to do it: one is to mass produce and lower the unit costs on an expendable vehicle. The other way is to create a reusable vehicle. We have an eye on both." The surge in small satellite activity has resulted in a concurrent rise of small satellite launch providers looking to meet growing demand. Both established players and more than a dozen of new entrants, are either designing and/or offering dedicated launch services for satellites ranging from CubeSats to satellites in the hundreds or low thousands of kilograms.

## AsiaSat and Rohde & Schwarz Develop FTA Ultra-HD Channel for Asia

AsiaSat and Rohde & Schwarz have partnered to advance next-generation Ultra-HD TV technologies by implementing a Free to Air (FTA) Ultra-HD channel on AsiaSat 4. Broadcasters and pay-tv platforms with an AsiaSat 4 C-band antenna in the Asia-Pacific region will be able to receive the Ultra-HD channel directly. Operating at 122 degrees, AsiaSat 4 provides satellite solutions to clients for TV distribution, Direct-to-Home (DTH), as well as broadband services across the Asia-Pacific region. Its high power C-band footprint spans from New Zealand to Pakistan and part of the Middle East. Rohde & Schwarz is providing a comprehensive broadcast solution that includes the R&S Clipster mastering station for editing, handling and playing out Ultra-HD data in real time. In addition, the R&S AVHE100 headend will be used for live encoding using a High Efficiency Video Coding (HEVC) encoder with 10 bit color depth.

## Inmarsat Signs Cobham Satcom to Design Terminal for European Aviation Network

Inmarsat has inked a contract with Cobham Satcom, who will design and produce an advanced Mobile Satellite Services (MSS) terminal for its recently announced European



Aviation Network high-speed In-Flight Connectivity (IFC) solution. The terminal will be a vital component in the European Aviation Network, which will be the first aviation passenger connectivity solution in Europe to combine a satellite network, operated by Inmarsat, and LTE-based ground network, operated by Deutsche Telekom, according to Inmarsat. As a result, Inmarsat claims commercial and business airlines will be able to offer reliable, high-speed Internet access to passengers during flights across the continent's high-traffic flight paths, using Inmarsat's 30MHz S-band spectrum allocation in all 28 European Union member states. The European Aviation Network will allow aircraft to switch automatically from Inmarsat's satellite connectivity to Deutsche Telekom's terrestrial component using an onboard network communicator, without impact or interference to service delivery. The new terminal will exploit Broadband Global Area Network (BGAN) technology to enable a direct connection between aircraft and Inmarsat's S-band satellite, which is currently being manufactured by Thales Alenia Space. Cobham Satcom is also responsible for updating the Inmarsat BGAN ground infrastructure to accommodate S-band operation as part of its agreement with Inmarsat.

## Eutelsat Relocating Two Satellites Now That Eutelsat 8 West B is Active

Eutelsat Communications' new satellite, Eutelsat 8 West B, is online and actively broadcasting TV channels to more than 52 million homes in the Middle East and North Africa (MENA) region.

Launched on Aug. 20 by an Ariane 5 rocket, the new high-power satellite is collocated with a constellation of satellites operated by Eutelsat and Nilesat at the 7/8 degrees west neighborhood. Eutelsat worked with its customers to switch more than 210 television channels to the new satellite the night of Sept. 30 from two other Eutelsat satellites located at 7/8 degrees West. Both satellites,

Eutelsat 8 West A and Eutelsat 8 West C, are now being relocated to 12.5 degrees west and 33 degrees east, respectively. The additional capacity on Eutelsat 8 West B will enable more than 100 further channels to be accommodated. The satellite also introduces C-band capacity to 7/8 degrees west, connected to footprints covering the African continent and reaching west to South America.

## Thales Alenia Space's Optical Integration Center Can Handle Four Satellites Simultaneously

Thales Alenia Space has opened its new Selene building in Cannes, which has a footprint of 1,500 square meters, including four separate integration zones for handling four satellites at the same time. The building, for which construction began in October 2014, is designed for the integration and testing of optical observation instruments, and complements Thales Alenia Space's other facilities in Cannes dedicated to optical observation programs, The Selene building is the last facet of the Odyssey program, which kicked off in 2008 to expand the Cannes production site to surrounding

land made available by the city of Cannes, which signed a long-term lease with Thales Alenia Space.

## Thuraya and Expansys Link up for Retail and Online SatPhone Sales in Europe

Thuraya Telecommunications has reached an agreement with leading online retailer Expansys to offer SatSleeve+ and SatSleeve Hotspot products in 28 countries across Europe. The full scope of the Expansys distribution agreement also means that Thuraya SatSleeve models will be available in high profile third party stores, such as Amazon, Orange and Carrefour. This agreement is the first time Expansys has offered satellite handset devices. Thuraya recently launched the SatSleeve+ and SatSleeve Hotspot, which build on the original SatSleeve concept by offering more choice, improved quality and a new hotspot option. Thuraya is marketing these products to travellers, adventurers and outdoor sportspeople, along with others desiring connectivity outside of terrestrial networks. Thuraya and Expansys will also deliver an extensive range of marketing support throughout the year, including complementary cross-selling opportunities as well as the depth of a sustained online demand generation campaign.

## Inmarsat to Relocate I-4 F2 Satellite, Picks Kratos SpaceNet System for Support

Inmarsat is planning to shift voice and broadband data services for the Europe, Mid-East and Africa region from the Inmarsat-4 F2 (I-4 F2) satellite to Alphasat, and then move I-4 F2 to a new position in order to create a fourth L-band region. To do so, the company has selected SpectralNet from Kratos Defense and Security Solutions' subsidiary RT Logic to support its L-band TACSAT (L-TAC) mobile satellite communications system. L-TAC delivers Ultra High Frequency (UHF)-like satellite capability for use with existing UHF tactical radios to approved government customers.



SpectralNet's plug-and-play capability enables Inmarsat to extend L-TAC services across additional satellites. The Inmarsat ground system uses SpectralNet's dynamic frequency conversion to transition voice and broadband data services from I-4 F2 to Alphasat. Following transition of all voice and data services, I-4 F2 will be flown to an orbital position for L-band coverage over the Middle East and Asia. Inmarsat's L-TAC bridges existing Beyond Line of Site (BLOS) tactical UHF radios through a combination of the Inmarsat L-band satellite networks and SpectralNet.

## NBN launches first satellite, aims for 240,000 customers

With services rolling out in April 2016, Australia's national broadband provider is set to put its interim satellite troubles behind it. NBN launched its first satellite, which from April 2016 will provide broadband coverage to up to 400,000 Australians living in rural and remote areas. Customers can expect to receive 25 Mbps downlink and 5 Mbps uplink connection speeds. "We expect between 220,000 and 240,000 end users to sign up for the NBN satellite service. The take-up rate will depend on a number of factors including the prices charged by retail service providers (RSPs)," explained Matt Dawson, NBN's satellite director, in an email to Total Telecom. The satellite, called Sky Muster, will undergo technical tests during the coming months, with a view to launching commercial, nationwide services in April 2016. Dawson said NBN has not

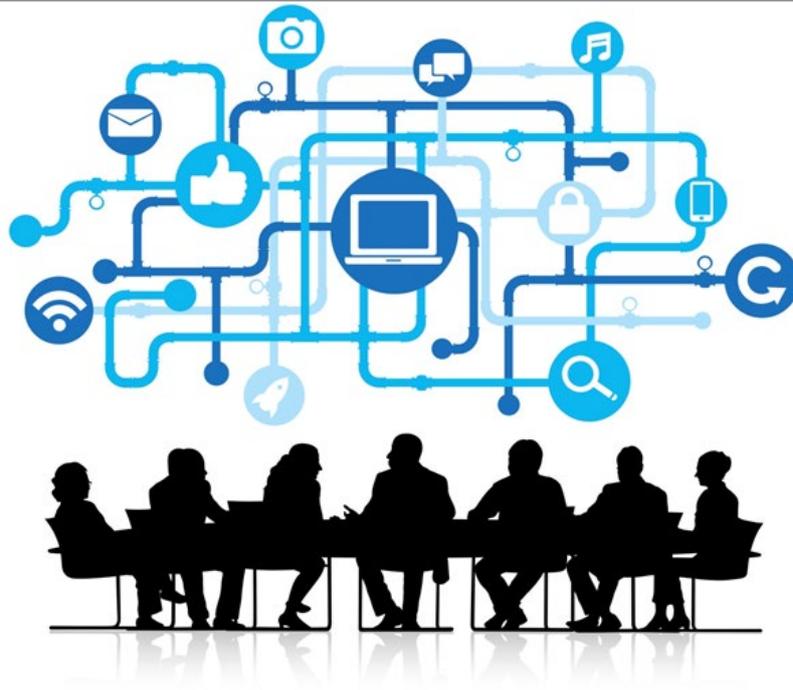
begun negotiating deals with RSPs, but he expects "all of our major RSP customers to sign up." He said retail operators will likely start announcing price plans from March. When complete, NBN's A\$1.8 billion satellite program will consist of two satellites with a combined capacity of 135 Gbps, and 10 ground stations. The cost per premises works out at A\$8,000, which is expensive but less costly than rolling out terrestrial networks to sparsely-populated parts of Australia. "The new service will offer a great service at a competitive price," Dawson insisted. "Interestingly, rural Australia contains many people who are amongst the country's biggest wealth generators in the farming and mining sectors. Many of them are already paying substantial charges for either mobile broadband or existing and lesser-quality satellite broadband," he noted. "Even for lower-income people, the NBN satellite service will offer a great service for a very competitive price," he said. Dawson added that RSPs will offer tiered levels of service, "from light packages aimed at those who just want to check emails and do light Web browsing, to higher-end, more data-heavy packages that will cater to those who want to stream and do more OTT video." With its new satellite, NBN will look to move on from its troubled interim satellite service. Under the previous government, NBN rented A\$352 million worth of satellite capacity to provide coverage to around 250,000 people living in remote areas. However, despite covering a quarter of a million people, NBN only had sufficient capacity to provide service to 48,000. That limit was reached in December and NBN stopped taking new orders. Those that did get service experienced speeds equivalent to dial-up Internet. In July 2014, NBN partnered with Thaicom subsidiary IP Star, which agreed to provide wholesale and retail satellite broadband services to a further 9,000 rural premises. NBN's new satellite "will help to close the divide and ensure no-one gets left behind," said NBN CEO Bill Morrow, in a statement. "The ability to video-conference friends and family, study courses online and visit doctors from your lounge room will all be possible in areas which have traditionally struggled to access basic internet," he continued. "We're one step closer to changing the digital face of our nation."

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## ◻ SAMENA Council chaired ITU's 5th Private Sector Chief Regulatory Officers (CRO) meeting

As the chairing organization of ITU-D's Private Sector Chief Regulatory Officers (CRO) Meeting, SAMENA Council led a discussion during the 5th Meeting on focus areas defined during the 4th Meeting, held earlier in June 2015. The 5th CRO Meeting took place on 11 October 2015 from 14:00 to 16:00 at Hungexpo, Budapest, Hungary.

Under the chairmanship of SAMENA Council, GSR-16 agenda issues were also defined.

The complete 5th CRO Meeting report will be made public in the near future by ITU.

The 5th Meeting reviewed progress made on actions defined during the 4th CRO Meeting, which included:

- Achieving the Optimal Regulatory Environment: given the dynamic, fast changing ICT ecosystem, use mechanisms to adopt relevant, flexible, and measurable policies and tools to enhance both supply and demand-side investment strategies.
- Promoting Market Access and Infrastructure: foster private sector investment, competition and innovation, which will drive broadband access as a platform for socio-economic development.



# SAMENA Council chaired panel session in ITU Telecom World



# 2015

*Opening up new markets in the converged ICT ecosystem: new users, new services or new segments? Monday, October 12, 2015, 11:00 AM - 12:30 PM, Conf Room 3*

The exponential growth of the digital economy is leading to new interconnected ecosystems, new cultures, markets and models. New technologies, trends in society and industry developments offer enormous potential for economic growth and social good. New partnerships and collaborations are beginning to emerge across verticals, industry sectors and geographies. Positions in newly forming value chains are up for grabs and open to contention. This session, chaired by SAMENA Council, examined this world of possibilities, exploring current growth trends and potential approaches to new markets, expanding connectivity to deploying innovative services or opening up new segments and to develop innovation capacity. Where are the opportunities and who are the winners right now? What are the regulatory, cultural and interoperability challenges as we move away from narrow industry silos into arenas of activity with multiple players, such as entertainment or health solutions.



Bocar BA, the chief executive of SAMENA Council, assesses a considerable level of willingness among the policy-makers and the private sector to engage with each other by redefining their relationships and the roles that should be exercised in the new digital age. Moreover, there is a great need to set new objectives, define new key performance indicators, develop a sense of expedience in tackling new, complex challenges, and, most importantly, refine overall timing in decision-making.

ITU Telecom World 2015

The event welcomed over 4,000 participants from 129 countries, and brought together top-level government representatives, leaders of industry – from established players to SMEs (small and medium enterprises) and young start-ups, from emerging and developed markets – along with high-level representatives of international organizations, entrepreneurs, accelerators, incubators and academia. Among these were over 235 ICT leaders from around the world.



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