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SatCloud™ offers a game-changing cloud-orchestrated solution for service providers

David Gelerman, President and CEO of SpaceBridge



Russian Satellite Communications Company



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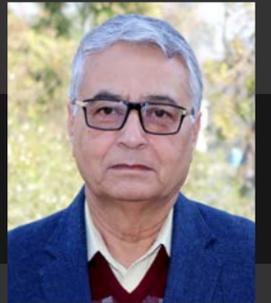
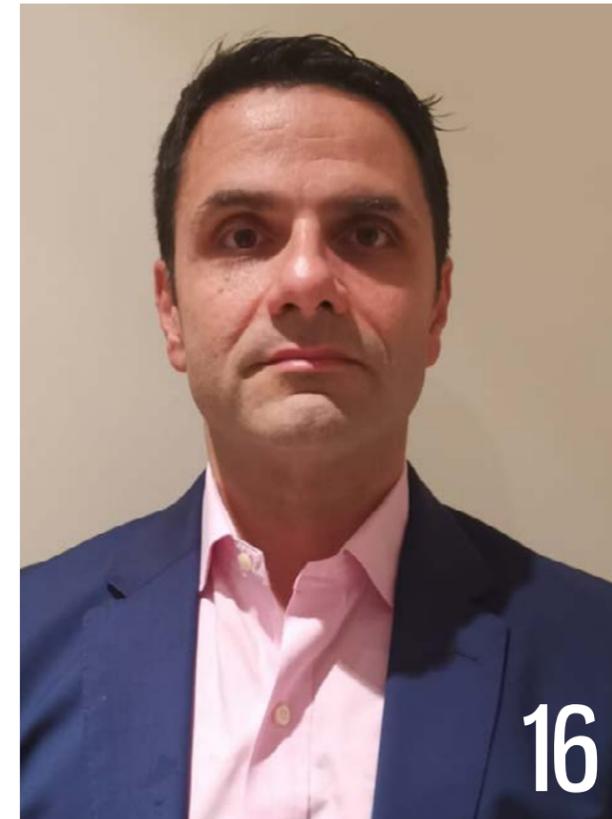


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Editor's Note

Dear Readers,

Welcome to the latest edition of Teletimes International.

This edition features an exclusive interview with David Geleman, an industry veteran and President & CEO of SpaceBridge. David talks about the current satellite market landscape and also sheds some light on SpaceBridge's SatCloud™ - this is a game-changing offering which takes away a lot of risk from the service users while providing all the benefits they would require from a satellite network point of view. I think this solution addresses the market according to its current conditions which are very tough and competitive. SatCloud™ should definitely drive adoption for new projects where investment into infrastructure is not always very easy.

On the subject of satellite connectivity, I would recommend the editorial from Kamal Antoun, Director, Middle East North Africa Region, Hughes Network Systems titled "The Power of VSATs to Connect the Unserved and Underserved in MENA" - the editorial gives a great overview of the potential and outlook of VSATs in the current environment. Another interesting article that I would recommend is "5G in Oil & Gas: Advantages and use cases" from Saurabh Verma, Business Head, ICT and Gourab Banik, Senior Research Analyst, ICT at Frost & Sullivan.

As always, you will find the latest news and updates from all major partners across the industry. Your feedback is welcome on info@teletimesinternational.com

Enjoy Reading!

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5G in Oil & Gas: Advantages and use cases

Saurabh Verma, Business Head, ICT and
Gourab Banik, Senior Research Analyst, ICT at Frost & Sullivan

Introduction

With more than 50 percent of global crude oil reserves and over 40 percent of its gas deposits, the Middle East and North Africa (MENA) region is one of the world's leading hydrocarbon markets. The need to meet rising international and local energy demand has driven high levels of investment in oil and gas projects over the past several years. These investments strengthened Saudi Arabia's position as one of the most prominent oil exporter globally and drove Qatar as the largest natural gas producer in the region.

Both people and equipment are exposed to harsh environments in the oil and gas industry. Thus, remote operation, inspection, and servicing of equipment, as well as monitoring of leaks are some of the critical routine task of the industry. At the same time, enhancing operational efficiency is of extreme importance for this capital intensive industry. In this regard, oil & gas industries have digitized several aspects of their entire value chain (upstream, mid-stream and down-stream). Technologies including M2M, IoT, cloud computing and robotics among others has been instrumental in digitally transforming the industry over the years. Moreover, a digital oil field, when augmented with technologies like artificial intelligence, machine learning, and edge computing are helping in achieving optimum performance, while minimizing safety risks. However,



proliferation of these technologies has led to exponential growth of data traffic levels and the need for real time communication. Whereas, legacy networks in the oil & gas industries are incapable of supporting such large volumes of real-time data. 5G, offering massive machine-type communication, high bandwidth and ultra-low latency, combined with the network functions virtualization (NFV) and software-defined networking (SDN) techniques is steadily becoming a cornerstone of future oil & gas networks and further enabling several new mission critical applications in the sector.

Key areas that 5G can be used to improve services:

Voice: Traditional communication

systems between remote oil and gas facilities to the shore or surrounding facilities are depended on very expensive satellite links. A major satellite link connects the offshore platform, while separate links are required for each surrounding vessels. However, satellite links provide only voice communications with the range limited only to a few miles and does not support data and video transmission. With advancement in telecommunication technologies, digital radio communication surfaced providing comparatively faster and reliable communications between specific groups or individuals. As the demand for more efficient mission critical voice communication continues to grow, the oil and gas industries can benefit from 5G network's high

availability, reliability and quality of service. Moreover, 5G with network slicing techniques will enable prioritization of mission critical voice communication with high bandwidth and low delay or jitter.

Use Case: Push-to-Talk service

Push-to-talk (PTT) has been serving the voice communication needs of the industry for decades. PTT systems provide instant communication between supported devices, allowing instructions and information to be relayed quickly and efficiently. Along with managing daily operations, it also provides an effective communication platform at the time of any emergency. Traditionally the service was delivered over Land Mobile Radio (LMR) network, which are narrowband and low capacity. The proliferation of wireless technologies like LTE and WLAN led to the emergence of broadband PTT and mission-critical PTT (MCPTT) services, helping in making communication possible for wider range and areas. However, the current LTE networks are yet to guarantee the compliance parameters as defined by 3GPP for MCPTT. Moreover, several new developments in the industries are changing the dynamics of push-to-talk, making it more useful. Few major enhanced PTT services includes group calls, transmission of texts, images, videos, and files with individuals or groups, voice and signaling encryption, talker priority, and geo-location sharing across compatible devices among others. PTT services have been costly to design, deploy and service, and without a fundamental redesign, delivery of advanced PTT services is not feasible. With enterprises looking to negate the need for costly modification of network infrastructure, service providers started implementing PTT over cloud services. In particular, oil & gas industry with large mobile workforces can benefit from the cost-effectiveness, speed, and convenience of cloud based PTT service. One of the important requirements of these enhanced PTT services is the need for high uptime or availability of the network. Ultra-high

reliability and ultra-low latency of 5G network is capable of addressing the uptime requisite, making 5G the voice communication network choice in the oil & gas sector.

Data: Oil & gas operators remotely monitor multitude of sensor based data points such as temperature, levels of volume, pressure, flow rates, and operating status of various equipments at tank, well, and pipeline facilities. In this regard, the industry is witnessing significant growth in installation of massive number of wireless devices and sensors, which is mostly powered with low power wide area (LPWA) network solutions like Sigfox, LoRa, NB-IoT and LTE-M. The several sensing and control capabilities provided by LPWA technologies are enabling automation of wellhead and pipeline operations. Operators are also implementing IoT solutions for linking devices together across multiple plant locations and establish a distributed environment for centralized monitoring and control of oilfield operations. However, when compared to the level of automation present in other industries, like automotive, the oil and gas sector has further scope of improvement. As the industry continues to go after greater efficiency and production speed, data intensive applications are expected to grow significantly and thus the need for higher bandwidth 5G networks. Moreover, 5G along with SDN and NVF has the potential to serve several IoT use cases for the industry like asset tracking and monitoring, gas detection and prevention, predictive and preventive maintenance, etc.

Use Case: Gas detection and prevention

Leakage detection has been essential part of the oil & gas industries for preventing accidents and avoiding malfunction of equipments. In this regard, sensors are deployed capable of collecting information about unwanted gas leaks to avoid losses of human as well as other infrastructures. It is important to make available the information collected from these sensors to operators for real-time

monitoring. Moreover, these systems are not only capable of generating alerts but also providing information to actuators to act automatically in order to stop the leakage and mitigate the consequences. Existing systems commonly uses WiFi-based mesh networking combined with low power consumption technologies like Zigbee for exchange of data between nodes over a small area. 5G will enable long distances communication - transmitting sensor data from remote offshore locations to onshore facilities for centralized monitoring in an efficient way. Advantage of 5G mobile network over existing communication technologies like Wifi, and 4G is the higher data transmission rate, lower end-to-end latency, ability to connect massive number of connection points, and consistent quality of experience.

Video: Remote security monitoring of critical infrastructure through CCTV cameras and recorders is hugely important in oil & gas industries. In addition to providing continuous video feeds, it also reduces the requirement of physical visits to remote sites. Over the years, CCTV cameras have predominantly moved to IP network. Also, demand for better quality images and faster streaming have grown in the video security surveillance sector across industries including oil & gas. Video surveillance networks are initially deployed through wired infrastructure, predominantly over fiber-optic cables due to high bandwidth requirement. However, fiber network installations are capital intensive and have coverage limitation especially in oil & gas industries which operates from remote location facilities. 5G network, capable of providing wider range of coverage, is bringing whole new array of opportunities for video security surveillance in this sector. Moreover, demand for highest level of availability, reliability, and speed for video surveillance systems have been growing over the years. As a result, the high bandwidth and ultra-low latency 5G network is becoming the key enabler of IP camera based remote video surveillance systems.

Use Case: Intelligent video surveillance systems

CCTV cameras when integrated with artificial intelligence capabilities are helping in improving the efficacy of video surveillance systems. By leveraging artificial intelligence, video surveillance operators are offering innovative solutions like face recognition, object recognition, event recognition, intelligent image processing, remote asset management, behavioral detection, and analytics. Moreover, implementing multi-access edge computing (MEC) is allowing the processing of video data within the edge of AI enabled CCTV network. Instead of sending all video surveillance data to the cloud, MEC reduces security risk by processing the data locally and transferring filtered data to the cloud. This approach will help enterprises in cutting down cloud storage cost and improving bandwidth utilization efficiency. Implementing this solution in oil & gas industries can automate access to authorized personnel and also help in determining anomalies regarding worker safety without human intervention. Workers not complying with standard safety procedures can be identified automatically through this system, minimizing worker safety risks in oil & gas facilities. 5G network will facilitate the uptake of these intelligent systems in the oil & gas industry with its ability to provide massive machine type, and highly reliable, ultra-low latency communication.

Emerging use cases that 5G will enable:

Industrial robots:

Robots provide an alternative to human labor, particularly for repetitive tasks performed in industries. More importantly robots can reduce risk of injury in hazardous environments in oil & gas sector, and improve operational efficiency and cut labor costs. Currently, a majority of the oil & gas operators use Ethernet wired technology for deploying robots. However, the industry is gradually moving towards wireless

connectivity since it is allowing flexible implementation and reconfiguration. The requirement of massive amount of intelligence for proper functioning of industrial robots is a major challenge. This in turn is leading to the growing need for implementation of complex machines and control systems for robots in industrial environment. Cloud robotics addresses these challenges by maintaining system intelligence in the cloud and simplified robotics on the ground. Moreover, efficiency and efficacy of industrial robots can be improved with the implementation of MEC solution. With this background, 5G network can play a key enabler role by connecting the cloud based system to the robots and their controllers.

Drone:

Unmanned aerial vehicles – UAVs or, more commonly known as drones have become integral to the oil and gas industry over the past few years. This is due to emergence of innovative use cases with advancement in technology. The ability of drones to integrate different types of sensors, imaging technologies, and other payload is opening up numerous use cases in oil and gas applications, mainly including nondestructive testing, leak detection, surveying, corridor mapping, and disaster management among others. Drone technology is providing a safer and cost-efficient alternative for deploying these use cases as compared to the existing ones. Operation of drones need high-speed internet connectivity and 5G can support drones connectivity requirements using a dedicated network slice without any disruption.

Virtual reality:

Virtual reality (VR) offers an interactive experience for simulation and modeling purpose in the oil and gas sector. VR headsets are capable of visualizing the earth's subsurface and interpret seismic data. In addition, through a VR-powered system, an individual can experience a virtual tour of refineries to understand its layout. This technology

presents a superior alternative to images, charts, and schematics in the planning and design of different processes in the oil and gas sector. Another emerging use case of VR is the development of digital twins for oil and gas facilities through data visualization techniques.

A digital twin mainly enables dynamic digital representation of physical plant assets. Using several data feeds from sensors installed on physical assets, it is designed to detect, predict, and optimize processes. VR-powered digital twins can help operators to create and make adjustments to plant designs, processes, and workflows. Also, it will help in monitoring operational performance and identifying key improvement opportunities. Along with providing reliable connectivity, high-performance 5G network will also allow higher flexibility in implementation of innovative VR use cases.

Conclusion & future outlook:

The oil and gas industry is amongst the most complex industries which deal with stringent guidelines regarding safety, health, and environment. Industry operators are continuously striving to accomplish better ways to comply with the norms imposed by different regulators, while meeting the global energy demands. Operators have embarked several digital transformation initiatives by holistic application of several technologies like embedding of sensor, storage, compute, advanced artificial intelligence, and machine learning among other. With technological advancements like MEC, intelligence will move towards the edge in a variety of endpoint devices installed in oil & gas companies. All these technological advancements are providing opportunity for oil & gas industries to transform their communication and application technology by leveraging the 5G network capabilities - enhanced mobile broadband (eMBB), ultra reliability and low latency communication (URLLC), massive machine type communication (mMTC). ■



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Interview: Khalid Athar

SatCloud™ offers a game-changing cloud-orchestrated solution for service providers

David Geleman, President and CEO of SpaceBridge speaks to Teletimes International

Mr. Geleman is a visionary engineer, innovator and businessman with over 40 years of experience. In 1988, Mr. Geleman founded SpaceBridge Inc. (formerly Advantech Wireless Inc.), serving as President and CEO for the last 31 years. Steering the company from start-up to becoming a dominant global player in the satellite ground communication business, both in baseband products and networking, as well as radio frequency converters and amplifiers. In 2018, after the divestiture of radio frequency business, Mr. Geleman carries on forward with the VSAT Networking business, keeping in tradition and with continued strengths as a best-in-class industry leader, leading the pace of innovation with one of the most advanced VSAT satellite network platforms, concentrating on VHTS, NGSO satellites and cost effective modems/routers for mass broadband consumer Internet market.

Prior to founding the company, Mr. Geleman held various management and design engineering positions at Nortel Networks, in the Transmission Networks Division, where he led team that developed multibillion dollar microwave terrestrial radio business.

Mr. Geleman holds a Master's of Science degree in Electrical Engineering (MSEE), specializing in Wireless Communications and Broadcasting.

Khalid Athar: How did the 2019 year play out for the satellite industry and for SpaceBridge in specific?

David Geleman: 2019 was a pivotal year for the industry as a whole and for SpaceBridge in particular. The industry started a consolidation trend whereby competitors are buying each other to have a larger market share. I believe that soon we will see more accretive acquisitions that will involve the satellite operators who instead of looking for very high EBITDA (and hence the ability of high leveraging) as they usually did will start following the traditional KPIs for doing business, such as ROI and profit margins. This trend will result in acquisitions around ground infrastructure equipment providers and ISPs to create fully integrated companies that can compete on equal footing with the companies that transformed from equipment providers to solution providers by launching their own satellites and also running retail.

Industry focuses on the LEO/MEO satellite will increase the capacity per each satellite by manifold. For SpaceBridge in specific, in 2019, we launched the C7700 cost-effective modem/router for mass broadband access market that fully meets the current market requirements and price point. We sold it from \$250 in small quantities to \$200 in large quantities. We entirely redesigned its HTS Platform and introduced to the market the SatCloud™ offering which is our SCPC-DAMA high data rate managed services platform.

KA: Can you give us a quick overview of the solutions you are providing?

DG: Today, SpaceBridge provides complete ground infrastructure required for communication with LEO/MEO/GEO satellites. This covers complete end-to-end solutions, including construction of the teleports for VSAT platforms that provide networking solutions, unmanned gateways, maned HUBs Teleports and various types of application oriented remote terminals, as well as the SCPC modems, and a combination of both for variety of applications such as low cost/high performance broadband internet access, cellular backhaul, maritime, oil and gas, mining, telemedicine, critical

SatCloud™ offers a cloud-orchestrated solution for service providers that want to provide occasional managed high-bit rate and on-demand end-to-end satellite solutions

infrastructures like homeland security, air traffic control (ATC) and military amongst others.

KA: Looking back at the change from Advantech to SpaceBridge as the main brand, how did it go from a marketing point of view?

DG: SpaceBridge is not exactly a brand-new name. For thirty years, we were known as the Advantech Wireless. This premium brand was highly sought for RF equipment but to a certain degree, it overshadowed our VSAT and broadcast business. Therefore, once we divested the RF business, we decided to use the name associated with the current business. In 2005 we purchased SpaceBridge Networks, the Ottawa based company specializing in development of the ASICs based on the DVB open standards two-way communication. As the current business closely represents the work done by SpaceBridge, it made a lot of sense to use this name. We had already maintained the spacebridge.com domain for all these years so it was easy to make that shift.

It is quite difficult to come up with the right and meaningful name that properly represents your marketplace and to have the domain available for such a name which was another reason for us to go ahead with this. During the last year, we launched an extensive promotion campaign to explain our history to the satellite market detailing on who we are as a company. Most of the people now know that SpaceBridge is the combination of the former Advantech Satellite Networks (previously also known as EMS Satellite Networks), SpaceBridge Networks, ACT-Wireless and Signal Processors Limited (SPL). Basically a combination of the companies that were acquired and integrated by Advantech Wireless. Looking back, it was the best thing we could have done, as today our customers are not confused about who we are and what are we doing. We have received great feedback on our campaign, we have created a momentum and gained the trust of our customers.

KA: Many of our readers would be interested in details about SatCloud. How can businesses benefit from it?

DG: SatCloud™ is a cloud-based, dynamic SCPC Bandwidth-on-Demand solution. Satellite service providers struggle to raise a budget or major funds required for new operations, as they do with choosing the right technology to commit to, and investing in relevant human resources and training, due to lack of visibility of integration costs when starting a new operation. SpaceBridge has created SatCloud™, a new, first-of-its-kind service to help address and resolve these challenges.

Designed to address satellite network operators' challenges, SatCloud™ solution uses Cloud Teleport Services such as Scheduling and Orchestration. Ideal for starter hubs, new service providers, pay-as-you-grow, new and/or gradual deployments models, SatCloud™ was designed to scale from just a few Mbps to hundreds of Mbps, measured by remote terminal throughput.

SatCloud™ offers a cloud-orchestrated solution for service providers that want to provide occasional managed high-bit rate and on-demand end-to-end

satellite solutions. This includes teleports, broadcasters, satellite operators, satellite network operators and ISPs as well as companies dealing in oil & gas, energy, and maritime satellite networks, satellite-delivered cloud applications providers and enterprise networks.

With SatCloud™, you avoid the need to invest capital expenses in deploying a new platform which is a significant reduction in risk. You also avoid the additional startup costs of training your engineering & support teams on new hardware systems maintenance and support. You pay only for what you need with pay-as-you-grow model, while gaining a complete Operation Suite for free. At the same time, you can enjoy managed services provided through our network operation centers managed by our highly-dedicated and experienced engineers. SatCloud comes with 24x7 network management services, based on a complete OpEx model for credit approved customers/partners.

KA: How are satellites contributing to the IoT space? Especially Industrial IoT?

DG: The proliferation of IP-enabled industrial things, or “objects,” equipped with sensors, processors and network capabilities means that more and more remote device functions and operations can and will be reported, controlled and automated via the internet and IP networks. The business benefits from IIoT can be large across many industries. They range from cost and downtime reductions, to efficiency and productivity gains, to better asset tracking and resource management, to new revenue opportunities.

SpaceBridge products and technology can uniquely address Industrial IoT / Machine-to-Machine data networking requirements for a wide variety of Industrial IoT (IIoT) applications. These include smart infrastructure, logistics, healthcare, smart utilities, and other solutions for various use cases in energy, insurance, mining, agriculture, ATM networks, lottery networks, kiosk & signage and many more.

Satellite networking advantages of the two-way satellite VSAT networks can provide major benefits for large-scale Industrial IoT (Internet of Things) data

networks. VSAT has proven to be a very reliable and cost-effective technology for collecting and distributing data to/from large numbers of distributed elements from different geographically dispersed locations. As a wireless bypass technology, VSATs can deliver uniform QOS network availability and managed network performance standards — across multiple countries, or telecoms provider territories.

SpaceBridge products and technology can uniquely address Industrial IoT / Machine-to-Machine data networking requirements for a wide variety of Industrial IoT (IIoT) applications

KA: Tell us a little bit more about your offerings in the IoT and IIoT space?

DG: SpaceBridge VSAT platform offers major advantages for powering Industrial IoT (IIoT/M2M) systems that require large-scale IP data networks, particularly those with geographically dispersed networks of many sites: our VSAT solution cost-effectively scales from a handful of locations to hundreds of thousands remote locations. VSAT terminals can be rapidly set up to connect IoT traffic from

remote locations that have no telecoms to provide either push to, or pull from the Hub.

ASAT System for IoT: The single SpaceBridge ASAT™ VSAT network can address industrial IoT data network requirements across many industries and cover hundreds of thousands subscribers. The solution typically includes SpaceBridge VSAT HUB and ASAT™ built-for IOT/M2M low cost VSAT C8000 all-outdoor Terminal.

Solution Overview

SpaceBridge provides a solution for connecting IP-enabled devices, located anywhere within a broad satellite footprint, to an organization’s central IoT system. A VSAT terminal/router installed at any given remote location and connected to IoT “Objects” such as sensors, meters, digital displays, or other devices. IoT device data, such as telematics, controls, content, status, etc., is routed via this VSAT terminal to the main system via satellite. IoT devices can be directly connected to a remote VSAT router by a LAN, or traffic can be received from downstream source devices via wireless methods such as Wi-Fi, LTE, RFID, low-power radio, etc. A VSAT terminal can also aggregate traffic from local devices, routers, other “edge nodes” and downstream network spokes, for final long-distance connectivity to the central IoT system. Once connected over the VSAT data network, Edge Nodes become accessible to the central IoT management system.

SpaceBridge VSAT HUB: The HUB for IoT manages network parameters across the network of remote VSAT terminals, and routes data to the customer’s central IoT system. It can set up and run optimal satellite capacity use parameters based on the IoT data traffic requirements with as mentioned 384 bits granularity per terminal/per any pre-set period of time (like 1 sec, 1 min, 1 hour, etc.). It may be co-located with the customer’s IoT system at corporate location, or connected to a data center, or the Cloud.

ASAT™ Built-for IOT/M2M VSAT Terminals: SpaceBridge’s IoT/M2M terminals are ultra-compact, all-outdoor weatherized integrated (BUC/LNBF/modem) Ka and

Ku-band satellite terminals for end-to-end satellite communications Internet of Things (IoT).

C8000 ASAT™ VSAT terminals connect to “IoT Objects” (e.g. sensors, meters, devices) at the remote site. The VSAT terminal routes data to the satellite and HUB for onward delivery to the customer’s IoT platform or application.

The C8000 ASAT™ terminal is designed specifically to deliver the best value-to-cost mix in a miniature, lightweight weatherized outdoor installation, meeting IoT requirements for compact sizing, ultra-low power consumption, and highly reliable, maintenance-free operation. Reliable broadband duplex IP communication Forward / Return link at IP speeds, the C8000 adds blazing-fast link speeds up to 100 / 10 Mbps (down / up) and increased IP networking features. Single PoE cable greatly simplifies installation. Easy do-it-yourself (DIY)/Non-professional self-installation and commissioning makes site installation and setup easier and more affordable than ever.

SpaceBridge ASAT™ IoT/M2M Advantages: Guaranteed polled access: From pipelines, to ATMs, from video surveillance to Smart Grids — provision network resources to meet varying traffic demand and priorities and optimize capacity. From bursty transactions to occasional polling, to video streaming, or daily bulk data uploads, our dynamically configurable space segment access method enables configuration to the exact polling needs of an IoT application.

The SpaceBridge’s WaveSwitch™ seamlessly optimizes the system’s satellite access method to suit varying customer application requirements in real time. This industry-first VSAT System with “on-the-fly” waveform switching, allocates bandwidth to sites or groups in real-time from a common pool of space segment. WaveSwitch™ dynamically selects from SpaceBridge’s industry leading RCSX™ choice of waveforms — ASCPC™, MF-TDMA or SCPC DVB-S2X access technologies.

From Low-Bit Rate to Broadband: Deliver a range of services – from multi-megabit

data for Smart Grid or surveillance to low-bit-rates for machine-polling — and reduce or optimize satellite costs.

Flexible Architecture: Star, Mesh and SCPC Point-to-Point network typologies can all be supported on the same platform, which comes with IP satellite link acceleration, optimization, header and payload compression, Network Management and QOS tools, and industrial-grade end-to-end IP security.

I believe that soon we will see more accretive acquisitions that will involve the satellite operators

KA: Which segments are displaying the highest signs of growth for SpaceBridge?

DG: The segments showing the highest growth signs for SpaceBridge would be the low cost mass market broadband Internet access, Cellular Backhaul (CBH), MNOs segment and the impact of 5G technologies that will revolutionize the market need of much higher bandwidth consumption for backhauling and integration into METRO Ethernet networks using innovative latest standards such as MEF and SD-WAN.

NGSO Constellations (MEO and LEO): Apart from all the great innovation that we have embarked upon with the adoption of the advanced NGSO networks, we will require to pay close attention to changes in the system architectures. It comes to managing every network resources and optimizing them, ensuring integration between the network components rules and the ground Internet network infrastructure and the Satellite

Gateways and terminals that will allow a competitive business case to compete with terrestrial Fiber Optic networks.

Moving to managed services: Advanced cloud-based networks, just like the SatCloud™ we introduced to the market last year, will be penetrating and becoming more available to lower overall cost of ownership.

We expect several huge networks to use the innovative technologies of the advanced platforms that we have been working on for many years. And of course, other verticals we have been exposed to for many years, including IIoT, maritime, IFC, and of course consumer broadband. Last, but not least, Tactical Satellite Communications Infrastructure Market for the benefit of military forces in various tiers and topologies will also be an area of growth for us in the coming future.

KA: What will be your focus for 2020?

DG: SpaceBridge holds a unique position today. As the satellite communications field underwent a fundamental transformation, it evolved us into a software provider that provides an end-to-end integrated solution to any satellite network needs, regardless of the specific verticals, i.e., as a software company, we consider ourselves a senior partner for any entrepreneur, SME or enterprise establishing a new satellite network. We see ourselves offering our network services to every existing customer in the market, indiscriminately to which segment they belong. Once a broadband satellite service can be provided that is superior to what is served through fiber optic in terms of bandwidth, latency and also in terms of price, a major differentiator in the value chain is created here.

In 2020 SpaceBridge will be focusing to continue the integration and development of NGSO / VHTS satellite networks cost reduction, enabling further smooth integration into SD-WAN networks and delivering the most capable satellite network with user friendly orchestration and unlimited broadband. We will be focusing on various segments ranging from households to airplanes to cruise ships or even tactical on-the-move and on-the-pause fighters – all of this will be possible thanks to our dynamic, high performance and cost effective next-generation satellite communications ground segment infrastructure. ■

The Power of VSATs to Connect the Unserved and Underserved in MENA

By: Kamal Antoun, Director, Middle East North Africa Region, Hughes Network Systems

Satellite service delivered over VSATs (very small aperture terminals) makes a convincing complement to fiber, cable and wireless networks, enabling MNOs and telcos to extend their networks and reach more subscribers in numerous ways.

Meeting the Needs of the Unserved and Underserved

Across the world, about half of the population lacks Internet access. In the Middle East, that figure is a little over 30% of the population. In Africa, it's closer to 60% of people who are unconnected. No matter the percentage, however, one fact remains: those who have no Internet access – the “unserved” – and those who have inadequate service – the “underserved” – can be found in every country, largely in rural and hard to reach places, but also in semi-urban and suburban areas.

This is because building the networks that underlie most types of connectivity – fiber, cable, DSL, cellular and microwave – is an expensive proposition that telecommunications companies (telcos) and mobile network operators (MNOs) must justify based on expected return on their investments. When faced with building a network across difficult (and therefore costly) terrain – such as islands, mountains and unpaved roads – or to serve thin populations with low subscriber potential, telcos will often choose to expand their networks where it is more economically profitable. Unfortunately, this business model often excludes the hard-to-reach or rural customer – leaving every nation with a portion of citizens unserved or underserved when it comes to Internet access.

Wherever terrestrial networks fall short



of reaching hard-to-serve or sparsely populated areas, satellite makes the connection.

• **Direct to Consumer** – In places where cable and fiber providers cannot reach individual homes and businesses, satellite can deliver Internet access. Usually offered on a subscription basis, satellite Internet brings all the advantages of connectivity to people's homes or workplaces, enabling them to send and receive email, shop online, watch videos, take online classes, pay bills and much more. All it takes is a VSAT antenna outside the home or business and a modem inside to connect to the computer or other Internet-enabled devices. Wi-Fi routers are often used with the VSAT to extend service throughout the home or business, across several devices.

• **Cellular Backhaul** – MNOs looking to extend connectivity to subscribers outside the reach of their terrestrial networks can use satellite to backhaul mobile traffic. This entails the provision of a satellite

VSAT and equipment at the cell tower to transmit the mobile traffic by satellite back to the network core. Satellite readily backhauls every type of mobile traffic – 2G, 3G, 4G/LTE and even 5G.

• **Community Wi-Fi Hotspots** – In places where direct-to-home service maybe unaffordable for citizens or unfeasible for providers, shared service can make Internet access available to more people. This model entails a satellite VSAT and modem at the location – such as a shop, community center, library or school – along with a Wi-Fi device that extends the signal across a 50- to 100-meter radius, making service available to anyone within range of the Wi-Fi signal, accessible with any Wi-Fi enabled device. Service can then be offered for free or on a pay-per-use basis.

These scenarios illustrate some of the ways VSATs can connect the unconnected, all without the investment and time required to build out the typical terrestrial infrastructure required for cable, fiber, and even wireless service.

Today's VSAT Technology

As demand for broadband has exploded worldwide, advances in the satellite industry over the past 10 years have enhanced the user experience dramatically. Service providers today have new options for satellite service that delivers the performance and speed that the consumer expects.

The newest generation of satellites are known as “High-Throughput Satellites” (HTS). A step-change in the HTS technology over earlier versions (“conventional” satellites) enables the re-use of spectrum

In the early 2000s, with previous generations of satellite technology, users of satellite would often complain of:

- Insufficient capacity
- Slow speeds and network congestion during peak hours
- Sites that were shut down with no notice

With today's High-Throughput Satellites (HTS) and advanced remote terminal technology, satellite service and speeds are outperforming many terrestrial services, and governments and operators are monetizing their investments while meeting critical needs.



frequencies – for more efficient delivery of capacity – as well as “Spot Beams” – which target more capacity over a specific area. Combined, these advances vastly increase the amount of capacity that a single satellite can deliver.

Another significant change in satellite services comes from the wide adoption of the Ka-band spectrum. Compared to C-band and Ku-band satellites, Ka-band makes more capacity available and enables the use of smaller – and therefore, less costly – terminals.

Other advances in the satellite industry – such as reusable rocket technology from companies like SpaceX and Blue Origin – has launch costs for putting up these satellites dropping by close to 50% when compared to a few years ago.

And manufacturing costs are coming down, as satellite engineers innovate new ways to deliver ever more capacity from a single satellite -- an order of magnitude greater than previous generations.

All told, these HTS Ka-band satellites have ushered in a new era of pragmatic and economically viable satellite solutions that many operators are leveraging in the Middle East, Africa and around the world. Where available, such satellites have brought down the cost of delivering broadband service that meets customers' need for high-speed Internet access.

As one example, Hughes operates the world's largest satellite Internet service, HughesNet® with millions of subscribers across the Americas. Other examples can be found in Africa with Algérie Telecom, InterSAT, and YahClick, the joint venture between Yahsat and Hughes.

Moreover, satellite technology continues to evolve, with still larger satellites with even more capacity being developed that promise to deliver end-user speeds of up to 100 Mbps. Not to mention Low Earth Orbit constellations that will complement High Throughput Satellites with global coverage and lower latency service – albeit at a higher cost-per-bit.

The Outlook is Bright for Satellite Solutions

Despite billions of dollars invested by governments in fiber infrastructure, the problem of connecting everyone, everywhere to the Internet has not been solved. To connect the unserved and underserved, VSAT service is an essential part of the mix of Internet access technologies that should be made available to citizens. Capacity and speeds are increasing while cost is coming down, making satellite the ideal connection to extend any MNO's network to reach the unserved and underserved.

Newer technologies have brought down the cost of satellite service, making it a

On the horizon, an innovative concept of “Software-Defined Satellites,” will eliminate the need for a fully customised engineering approach to each new satellite built. This innovation makes way for standard satellite designs that can be built the way we build anything today – on an assembly line. This could significantly reduce the cost of building a satellite.

practical alternative for delivering Internet access beyond the reach of terrestrial technologies – whether by subsidizing the cost of the remote terminals or the entire service (to provide free public Wi-Fi access). Policy makers can also subsidize cellular backhaul by satellite to enable MNOs to extend their network reach to serve more customers.

When it comes to bridging the digital divide in the Middle East and Africa, satellite is essential and can help MNOs reach more of the unserved and underserved than ever before. ■

SES and Isotropic Systems enter new phase of customer edge terminal antenna development to unleash O3b mPOWER



Stewart Sanders
EVP, SES



Isotropic Systems and SES have announced a new developmental phase of their collaborative partnership to produce scalable, cost-effective multi-beam customer edge terminal antennas capable of unlocking access to the groundbreaking O3b mPOWER system across government and defence, telco and cellular backhaul, aero, maritime, and offshore markets.

Together with SES, Isotropic Systems will review, refine, and test key components of its full line of customised digital software-defined terminals throughout 2020, optimising the tiered platform to meet specific performance, cost, power, and connectivity requirements of user cases around the world. The development roadmap will culminate in a series of comprehensive engineering evaluations of Isotropic Systems' multi-beam antenna components, prior to the commercial launch of the customer edge terminals and the O3b mPOWER Medium Earth Orbit (MEO) system in 2021.

Many of the upcoming trials, the first underway this month, will focus on maximising the effectiveness of the circuits behind the optical beam-forming lens modules at the core of the Isotropic

Systems adaptable multi-beam antenna. The patented lens module technology is a major differentiator, enabling seamless switching between SES's multi-orbit fleets, and opening the door to a new age of widely accessible and tailored high-performance Ku- and Ka-band connectivity.

"The SES-Isotropic Systems partnership is driving the development of innovative multi-beam customer edge terminal antennas using digital beamforming that will light up new market opportunities for the tailored scalability and flexibility of our O3b mPOWER network and our unique multi-orbit MEO-GEO constellations," said Stewart Sanders, SES's Executive Vice President and O3b mPOWER Programme Lead. "Our shared vision is keenly focused on bringing game-changing, high-performance broadband to both highly sophisticated and mass markets across the globe, on land, at sea, and in the air."

"The Isotropic Systems multi-beam antennas, featuring our patented optical digital beam-forming lens technologies, provide the high-throughput ground infrastructure required to unlock a new wave of HTS constellations, including SES's high-performance multi-

constellation satellite networks across a wide range of markets," explained John Finney, founder and CEO of Isotropic Systems. "Our terminals are customisable to meet the performance, cost, and power requirements of countless applications – from the most complex government defence systems and mobile backhaul solutions capable of extending 5G, to next-gen connected experiences aboard commercial airliners, cruise ships, offshore rigs, and even small fishing boats at sea."

SES and Isotropic Systems first announced their partnership in 2018 when SES contracted Isotropic Systems to develop smart, high-throughput customer edge terminal solutions for the O3b mPOWER system. The fully funded, next-gen and highly flexible MEO satellite-based data communications system is a scalable terabit-level constellation supporting thousands of dynamic beams, and exponentially expands SES's first-generation O3b MEO system capabilities to deliver a whole new level of customisation.

Isotropic Systems showcased a mockup of the customer edge terminal antenna at the Satellite 2020 Conference and Exhibition at the Washington Convention Center held on March 9-12. ■

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Cyta achieves Tier 4 Certification of its Makarios Teleport from WTA

Cyta announces that its Makarios Teleport full certification under the World Teleport Association (WTA) Teleport Certification Program has been renewed with an improvement to Tier 4, following an audit of the Teleport by the Association.

The World Teleport Association (WTA) focuses on improving the business of satellite communications. At the core of its membership are the world's most innovative operators of teleports, from independents to multinationals, niche service providers to global carriers. WTA is dedicated to advocating for the interests of teleport operators in the global telecommunications market and promoting excellence in teleport business practice, technology and operations.

Cyta's Makarios Teleport enjoys a privileged geographical location in Cyprus with optimal conditions for satellite communications. It has extensive infrastructure and is well connected with Cyta's international fiber network providing ample capacity and dedicated links to major international nodes. The Teleport offers extensive international

reach and serves as a major telecommunications hub in the Eastern Mediterranean. It offers a wide range of satellite services in the global market including ka-band gateways, satellite TV, IP links, VSAT services and satellite monitoring and control operations.

"We are very proud that Makarios Teleport has been awarded the TIER 4 full certification by WTA and is among the few Teleports worldwide achieving such an excellence. This certification is the best recognition of the state-of-the-art infrastructure and top level of services offered to our customers at Makarios Teleport", says Costas Psillides, Manager of Cyta's International Wholesale Market.

"By awarding Tier 4 Certification to Makarios Teleport, WTA is accomplishing the most important goal of the Certification program: not just to measure the factors that make for high quality of service, but to motivate improvement. We look forward to helping other teleport operators raise the quality of their facilities and procedures to better serve their customers and grow their businesses", says WTA Executive Director, Robert Bell. ■

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Building a Fully Connected, Intelligent World



President of Estonia makes historic voyage and manages state affairs from Antarctica over the Iridium Network

Iridium congratulates Her Excellency Kersti Kaljulaid, President of the Republic of Estonia, on her successful expedition to Antarctica. In commemoration of the 200th anniversary of its discovery by Estonian born Admiral Fabian Gottlieb von Bellingshausen, President Kaljulaid's efforts included managing state affairs in real-time from Antarctica and signing digital legally binding documents from the polar areas using the weather resilient Iridium Certus specialty satellite broadband service. The trip to Antarctica began on January 27th with the President returned to Estonia on January 31st.



President Kaljulaid's visit to the continent also focused on increasing awareness of the impacts of climate change and demonstrating the opportunities offered by embracing a digital society and eGovernance. As a leading digital economy, Estonia is driving cutting edge technology and changing the way people work. Under Estonia's eGovernance framework, Estonians and digital nomads can work anywhere in the world. To demonstrate the possibilities, Estonian President Kersti Kaljulaid moved her office to Antarctica for a week. Managing affairs of the State is already a monumental task but managing them from the frozen continent required

extra ingenuity. The President used an Iridium Certus terminal from Thales to stay connected and lead the country from one of the most remote areas on the planet. Highlighting this historic event is a post on twitter from President Kaljulaid while in Antarctica, explaining the value of the Estonian digital society. Iridium CEO Matt Desch tweeted in response, "Not hard to see why Estonia is one of the leading digital communications societies when the President is casually doing state business from the bottom of the world. Guess you're just out and about, keeping in touch with Iridium Certus technology?

Pretty cool! (literally)." The President compared both digital society and climate change as not recognizing national borders. She emphasized that the polar areas are particularly sensitive to changes in our climate, and that all the countries of the world must find solutions together.

"Being a digital society means geography doesn't matter anymore – we can do business, run the country and communicate with our close ones wherever we are in the world," she said. This historic visit proves that the world is more connected than ever, and Iridium is honored to play a role. ■

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No touch commissioning

By: Alvaro Sanchez



Alvaro Sanchez is Integrasys CEO and Marquess of Antella (Noble Title from 17th century in Spain).

Alvaro is Software and Industrial engineer by European University and a Master Degree in Management, Sales & Marketing by ESIC Business School.

Alvaro during the last 10 years has worked at Integrasys as Management, Sales Director and Executive roles were he was very successful growing the sales, revenue, profit and responsibilities within the company; and previous to that he was working at CERN European Organization for Nuclear Research as a RF Engineer measuring timing in a Nanosecond Synchronization for measuring the Neutrino Speed.

The Noble Title that he hosts, is coming in his heritage from 1649 from his ancestor Nicolo Palavicino, given by Phillip IV in Sicily for the Antella region near Florence.

Satellite is considered difficult to use communications solution; many users consider satellite as a last resource — however, the satellite has its own set of advantages when compared to any other communications solution and, at Integrasys, the company offers a key piece of advanced technology to “simplify satellite”.

Antennas need to be certified before they can become operational — from time to time, antennas are required to be calibrated. Integrasys offers a set of tools for auto-commissioning and maintenance for Satellite-on-the-Move (SOTM) and Satellite-on-the-Pause (SOTP) antennas through user interaction via a cool app however these days it can be more automated thanks to IoT (Internet of Things) and M2M (Machine to Machine)

Multiple service providers have demanded even more automation and Integrasys has built a Restful API for integration within the antenna control unit itself, without the need of Touch of a Button, what we call No Touch Commissioning.

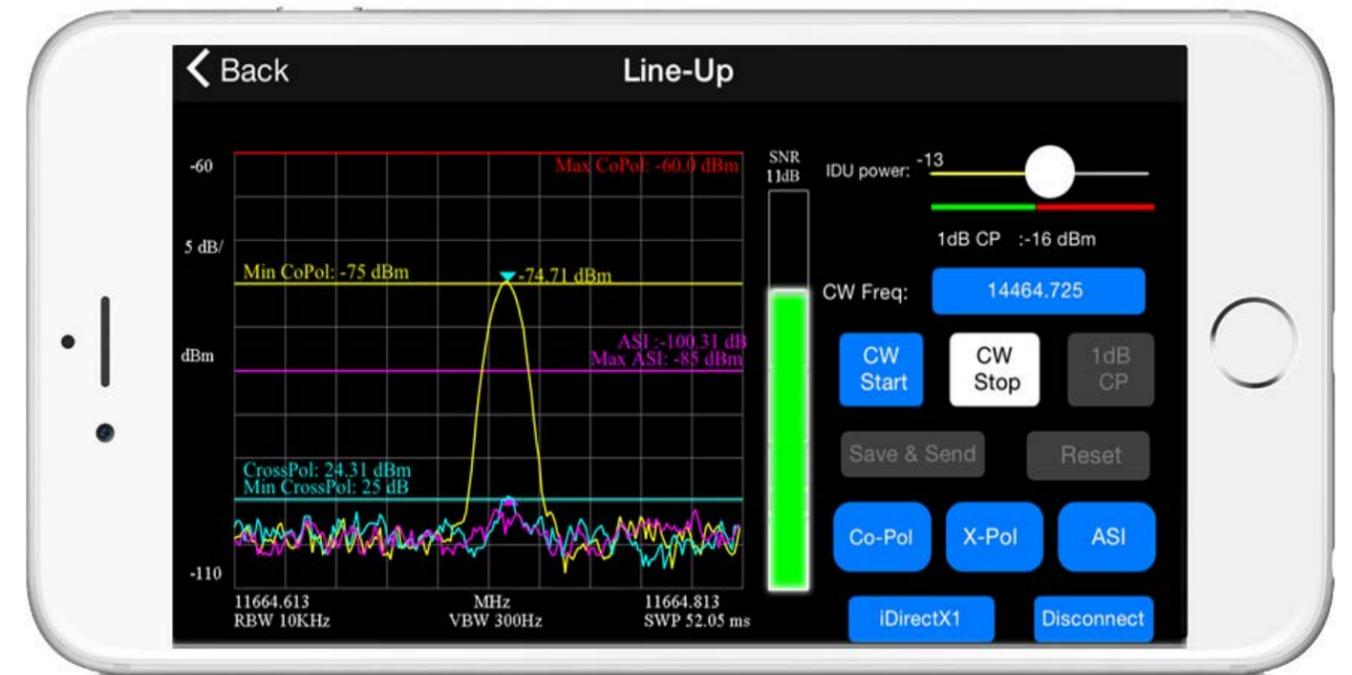
VSAT installation is a complex task. Often,

the technician handling the install does not have qualified training and knowledge to complete this work. Pointing to the correct azimuth, elevation and polarization is crucial — these specifications are often not met during VSAT installation. That inaccuracy drives severe interference and generates multiple attenuations and service failures due to the attendant atmospheric events and human factors that occur that are the result of an incorrect installation.

The smarter the antenna gets, the easier the pointing... however, no matter how intelligent antennas become, they still cannot certify themselves or complete the correct measurement procedures. As satellite operators demand full compliance with their specifications, the human element is required to ensure the reliability and viability of a VSAT installation.

Smart antennas function like computers, automatically pointing the antenna to the target satellite. In many cases, this is accomplished with decent accuracy and reception is locked in for the VSAT.

If the signal decreases in power, the



motor or software looks for alternatives and searches for a satellite visible for a connection. The antenna has an autonomous computer system to obtain the most effective communication pathway.

However, terminals can be quite remote

well as incorporates a new API (Application Programming Interface) that replaces the physical installer.

Integrasys’ Satmotion is an unmanned solution for calibrating a particular antenna with any BUC, in any frequency and certifies satellite providers with the correct

accuracy, CrossPol Isolation, Adjacent Satellite Interference Power, 1dB Compression Point and PASS /FAIL results.

This product affords no-touch commissioning (NTC) and enables anyone to complete this process without the touch of a single button. The terminal is registered into the target network just as an Apple iPhone is registered in a terrestrial network, all completed seamlessly.

Integrasys also provides a cost effective option to install the computer on the antenna ACU (Antenna Control Unit). Both options are offered to customers who demand varying requirements for different applications, such as maritime, aircraft, trains or vehicles.

Satmotion is the perfect solution for automating access to the satellite for M2M and IoT in Sea, Air or Ground in a manner that is like an iPhone being authenticated in a cellular network. Any interference or misalignment issues are negated. Satmotion adds extra value, thanks to reducing the time previously required for VSAT install. The app also provides more and more finely tuned information.

The product’s quality, price and unique position are making this offering the standard de-facto on the market as the VSAT auto-commissioning solution... making “satellite simple.”

satellite has its own set of advantages when compared to any other communications solution

and tend to have their RF settings misconfigured and that results in the unit not being able to connect the network to the target satellite.

Introducing Satmotion from Integrasys, a grand solution to these problems. Satmotion is a helpful device that optimizes the power of the transmitter and negates interferences or RF misconfiguration.

Satmotion has high-end equipment at the hub which replaces Network Operations Center (NOC) personnel as

Crosspol and 1dB Compression Point test. This functionality saves a great deal of time and drives cost savings — obviously good news for any company.

As mentioned, Integrasys developed the API that enables auto-acquire antennas to auto-certificate themselves. The company provides a simple, embedded PC that runs simple code with which any antenna is able to understand and interact and it is available also to virtualize it inside the ACU.

The Satmotion API provides pointing



Ma Yue, Vice President of Huawei Enterprise Business Group

Huawei builds a solid foundation for the Intelligent World 2030 with new connectivity, computing, platform, and ecosystem

First global live streaming of industrial digital transformation conference

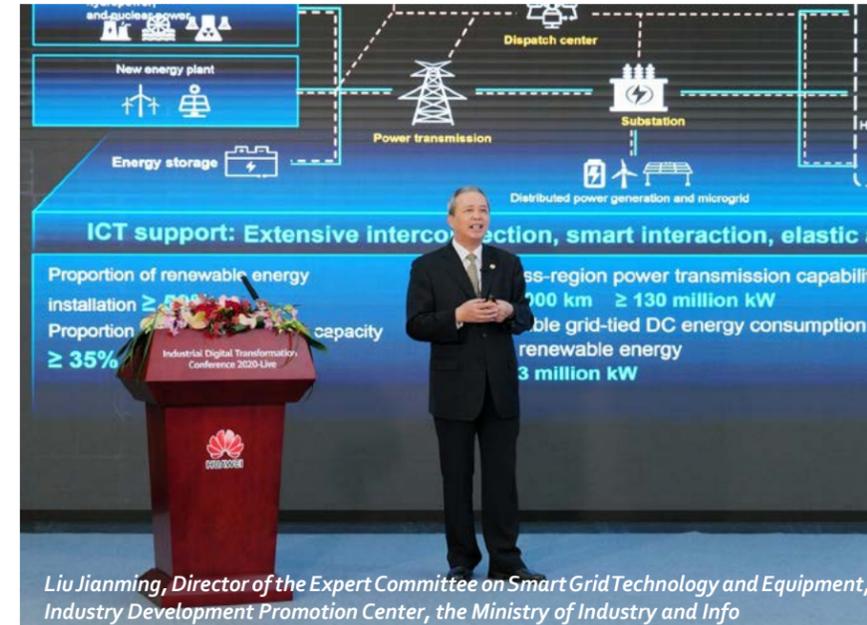
Mobile World Congress (MWC) Barcelona 2020 has been cancelled due to the coronavirus outbreak but, Huawei held its global Industrial Digital Transformation Conference. It was held via live streaming connecting guests from across the world including UK, Switzerland, USA, Germany and Italy with the theme "Hi, Intelligent World". The conference previewed five trends of an intelligent world 10 years' from now and proposed a foundation built on new types of connectivity, computing,

platform, and ecosystem. This will enable the intelligent development of a wide variety of industries, including urban development, manufacturing, energy, finance, transportation, and so on. The ASEAN Economic Community, Shenzhen Airport Group, and other customers also shared their insights and experiences in digital transformation.

In the future, information flows with new ICT, such as 5G, AI, and IoT, will help us

build the foundation from which everything originates. Simply put, the world of 2030 will be intelligent. Standing at the start of a new decade, Huawei believes the intelligent world 2030 will have five features:

- 1) at a governmental level, people-oriented digital governments will be built to adapt to people's livelihoods better;
- 2) at an economic level, intelligent robots will make up a critical part of a future labor force;



Liu Jianming, Director of the Expert Committee on Smart Grid Technology and Equipment, Industry Development Promotion Center, the Ministry of Industry and Info

- 3) at a social level, digital technology will help equalize the sharing and proper distribution of education, healthcare, and other public resources, achieving digital equality;
- 4) from a cultural point of view, citizens will be freed from heavy physical labor and tedious repetitive work, and their focus will naturally shift from material value to mental value; and
- 5) from an environmental point of view, the deployment of various digital technologies, we help us monitor and control carbon emissions more effectively and, as a result, help protect the earth.

Ma Yue, Vice President of Huawei Enterprise Business Group, commented: "The next decade will witness rapid development of new ICT. Huawei believes new types of connectivity, computing, platform, and ecosystem will build a solid foundation for the intelligent world of 2030. Ultra-broadband and high-speed networking built using 5G, Wi-Fi 6, and quantum communications will bridge the physical and digital worlds, laying a foundation for the intelligent world."

Mr. Ma continued: "New computing will offer a full-stack, all-scenario solution that covers bottom-layer chips, all the way to upper-layer algorithms, spanning consumers to business and which constitutes the core of intelligent transformation. The converged, shared, and digital platform features high

efficiency and openness, enabling customers to focus on their own unique advantages and service innovation, therefore playing a key role in enabling the digital transformation of industries. Based on enterprise business Strategy, Architecture, Policy, and Operations (SAPO), the new ecosystem that provides a single field of expertise allied to multiple skills and is deeply integrated, can offer a more comprehensive customer-oriented business solutions."

The intelligent world of 2030 cannot exist without the digital transformation of industries across the spectrum. Huawei has accumulated extensive experience in helping industries such as government, transportation, finance, and electric power achieve digital transformation for the present and the future, through new connectivity, computing, platform, and ecosystem. Currently, more than 700 cities worldwide and 228 of the Fortune Global 500 companies, including 58 of the Fortune Global 100 companies, have selected Huawei as their partner for digital transformation.

Dr. Aladdin D. Rillo, Deputy Secretary-General for ASEAN Economic Community commented: "ASEAN's digital economy soared to USD 100 billion for first time in 2019, and is expected to grow to over USD 300 billion by 2025. For governments, business and society, digital transformation is no longer an option but an imperative path to empower the economy and businesses.



Zhang Lixuan, GM of Digitalization, Shenzhen Airport Group

To further promote digital transformation in ASEAN, new initiatives are currently being pursued such as the development of 5G ecosystem, framework on international mobile roaming, smart manufacturing, and an ASEAN innovation network. But to be successful, we also need the support of the private sector and market players like Huawei particularly in building an innovation friendly ecosystem and addressing issues related to big idea and data privacy."

Zhang Lixuan, GM of Digitalization, Shenzhen Airport Group (SAG), talked about how the group delivered digital transformation and constructed a smart airport. The digital transformation of an airport is a complex project but with its vision of "One Airport, One Dream", SAG created a systematic approach to building a fully-digital airport with outstanding user experience. The Group selected Huawei as its strategic partner for digital transformation, using the Huawei Horizon Digital Platform with cloud-network synergy.

The platform integrated six ICT resources - IoT, big data, AI, video cloud, GIS, and ICP - to construct four comprehensive service systems: security, operations control, services, and management. The single-view of airport operations has had significant benefits, including increasing flight punctuality to 87%, and intelligent stand allocation that can complete within seconds, reducing the number of shuttle

Incorporating:



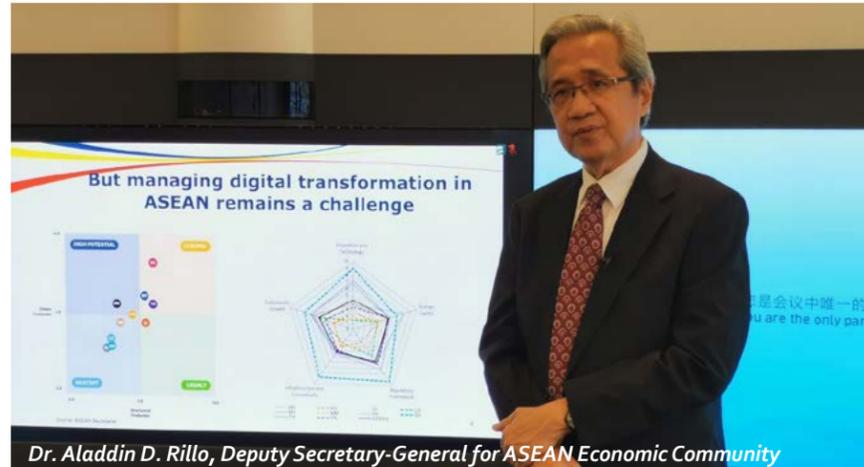
data platform with decoupled architecture and applied AI and machine learning to the entire business chain to enhance credit risk control. Furthermore, it deployed a financial transaction cloud and moved applications from the host to the cloud, enhancing customer experience and supporting continuous service innovation.

Liu Jianming, Director of the Expert Committee on "Smart Grid Technology and Equipment", Industry Development Promotion Center, the Ministry of Industry and Information Technology (MIIT) of China, believes that future power systems will integrate digital technology extensively with traditional power. As digital technologies usage continues to expand in the electric power field, future power systems will evolve toward "universal connectivity, intelligent interaction, high flexibility, and solid security and control."

In his speech, Director Liu introduced several cases of digital transformation practices in China's electric power industry. In 2019, the Qinhai Green Energy Cloud Network Control Platform and Big Data Center supported the Qinhai Province of China for 15 consecutive days using 100% clean energy. When applied to power transmission and distribution services, AI technology improved inspection efficiency, and increased the intelligent ability of equipment identification operations by 90%. ICT is now supporting the daily operations of the public charging infrastructure, serving more than 500,000 electric vehicles in China with a goal of 6.18 million by the end of the year.

Recently, the coronavirus outbreak has attracted global attention. The Zhejiang, Jiangsu, and Sichuan subsidiaries of the State Grid Corporation of China (SGCC) analyzed the power index of enterprise resumptions based on big data from the electricity grid. This has helped provide local government authorities with an overview of the resumption of local enterprise production.

We are honored to participate in this astonishing era of intelligent development. Huawei Enterprise Group's "Platform + AI + Ecosystem" strategy focuses on cooperation with ecosystem partners, governments and enterprises to build a solid foundation for the intelligent world with new types of connectivity, computing, platform, and ecosystem, and together delivering the promise of the intelligent era. **■**



bus passengers by 4 million annually. This makes Shenzhen Airport become the world's first organization to publish cases on the New Experience in Travel and Technologies (NEXTT) platform. From a security point of view, the new system provides more accurate and intelligent control over terminal areas, airfields, public areas, and cargo areas. The facial recognition solution improves security check efficiency by 60%, reduces the risk of passengers' loss of ID card by taking it out for checking, and meets the differentiated requirements of business passengers.

customers, and serve as a technology platform to bring banking services into digital world. The traditional concept of banks' digital transformation was only as a technology transformation for replacing core application systems. However, he believes that real digital transformation is a process of integrating IT and business teams and that rapid, step-by-step deployment, fast iteration, and technology agility will drive business agility.

In the future, 5G will drive significant improvements in app capabilities that will help bring banking services into the digital world, helping branches and account managers regain engage with retail and corporate customers much more regularly. He cited China Merchants Bank as an example. The bank established a private cloud and mobile platform, and opened host functions to manage devices and users, and control mobile network security. It also built a big

Chen Kunte, former Chief Information Officer of China Merchants Bank and currently Chief Digital Transformation Officer of Global Financial Services in Huawei's Enterprise Business Group, commented on the huge changes in the Chinese banking industry. In the future, the 'app' will become an ecosystem that integrates retail and corporate



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IoT Middle East 2020 focusses on driving innovation and improving sustainability



An impressive line-up of partners and speakers addressed industry peers and stakeholders on utilising the IoT landscape to drive innovation at the 5th Internet of Things 2020.

The keynote addressed how AI has made business more profitable with Dr. Sven Korner and using semantic processing to interpret data to deliver real knowledge.

Marwan bin Dalmook, SVP, ICT Commercial and Business Development and Smart City Operations, du got in conversation with Dr. Muneer Zuhdi, Partner at Bell Labs by Nokia on digitization, redefining business models and 5G.

Jihad Tayara, CEO at Evoteq spoke about Smart homes, Office of the Future and smarter cities followed by Karl Feilder, Founder and Chairman of Neural Fuels presented AIoT cases on sustainable business models and mitigating climate change through technology.

Jassem Nasser, Chief Strategy Officer, Thuraya talked about the growing role of innovative applications before the panel discussions on monetizing IoT within ecosystems followed by Christophe Vloebergh presenting Daimler AG's vision on the Future of Mobility.

Faraz Mehdi, Regional Sales head, eufy Security by ANKER spoke about the current challenges of home security, privacy of data, Ai in home security and ease of use with Smart Home Eco System followed by Fadi Hindi delivering a key note on the Future of the Workforce.

Markku Willenius, Dean of Dubai Future Academy concluded the conference with a keynote on how to harness new technologies for human good and progress and how UAE will play a significant role as a testbed for resource efficient and adaptive economies.

Other notable speakers included Brian deFrancesca, Ahmed Kawakbi,

Danish Farhan, Janne Kilpelainen, Dr. Mohammed AlAwadhi, Richard Estephan, Balaji Nambi and Fadi Hindi. The cross-industry C-level conference brought together forward-thinking experts sharing insights on business, technology and organizational transformation to leverage new business and new ecosystems with a focus on how to generate business out of IoT, AI, ML and Intelligent automation.

New tech like AI and ML needs the data of IoT to deliver accurate analyses and output. IoT adoption is hence expected to grow by two-digit numbers and reach \$18 billion in MEA related IoT investments by 2023, as both governmental and private sector companies ramp up their digital transformation capabilities.

The 5th Internet of Things 2020 is a game-changing platform, attracting over 400 attendees yearly, addressing the business relevance of technology across multiple verticals. ■



Etisalat completes acquisition of cyber security specialist firm Help AG

The deal creates the region's strongest cyber security company and firmly positions Etisalat as a key enabler of secure and effective digital transformation for MEA businesses



Etisalat has completed the acquisition of Help AG, a privately held regional company

specialising in the delivery of cybersecurity solutions and services.

Prompted by a clear synergy, this acquisition sees the integration of the cybersecurity capabilities of both companies to create the region's strongest cyber security unit augmenting Etisalat Digital's portfolio of digital security services.

This development enables Etisalat Digital established lines of business - comprising the Cloud, Internet of Things (IoT), Artificial Intelligence, Big Data and Analytics - to become more robust and resilient against modern day cyber threats. With its business and technological leadership and flexible

business models, the company is uniquely positioned to create added value for its customers and business partners.

Commenting on the acquisition, Salvador Anglada, Group Chief Business Officer at Etisalat said: "Help AG has established itself as the region's trusted security advisor. With cyber security playing a fundamental role in all aspects of digital business today, this acquisition fits perfectly into our strategy of being a key enabler of secure, seamless and effective digital transformation for our customers. We have full trust and confidence that Help AG's leadership will effectively add value to our security portfolio and amplify the cybersecurity capabilities of our clients." ■

Huawei CloudEngine 16800 wins Frost & Sullivan 2020 Global Data Center Switch Technology Leadership Award



Huawei's CloudEngine 16800 data center switch won Frost & Sullivan 2020 Global Data Center Switch Technology Leadership Award, receiving 9.6 points for its technology leverage and 9.2 points for customer impact (10 points in total). It is the first 400GE switch in the industry to win this award.

This award is intended to research and evaluate flagship data center switches from mainstream suppliers in the industry. After 10 rounds of selection, Huawei CloudEngine 16800 ranked first in both technology leverage (9.6 points) and customer impact (9.2 points), surpassing competitors' products and showing its industry-leading strength.

"5G and AI have attracted wide attention from both the industry and society, and

network infrastructure, as an important part of the new infrastructure, is also gaining attention. Huawei CloudEngine 16800 has made breakthroughs in high-density 400GE switching, intelligent lossless network performance, and intelligent O&M. It is Huawei's flagship product in the AI era." said Leon Wang, President of Huawei's Data Center Network Domain, "I am delighted that Huawei has received this professional award in the industry. We are also confident that we will remain customer-centric, continuously invest in innovation, and maintain our global leadership."

In January 2019, Huawei launched the industry's first data center switch oriented to the AI era — CloudEngine 16800. The CloudEngine 16800 supports the industry's highest-density 400GE interfaces and

provides a switching capability five times the industry average, meeting smooth evolution requirements for the next 10 years. The CloudEngine 16800 is used to build the intelligent and lossless Ethernet with zero packet loss, improving the computing efficiency and storage IOPS. In addition, Huawei CloudEngine 16800 uses AI technologies and works with iMaster NCE FabricInsight to detect faults within 1 minute, locate faults within 3 minutes, and rectify faults within 5 minutes, accelerating evolution to the autonomous driving network. Furthermore, Huawei CloudEngine 16800 series switches overcome multiple hardware engineering technical difficulties, such as ultra-high-speed signal transmission, super heat dissipation, and efficient power supply, reducing the per-bit power consumption by 26% and saving energy. ■

Huawei recognized as a January 2020 Gartner Peer Insights Customers' Choice for Wired and Wireless LAN Access Infrastructure

Huawei has been named a January 2020 Gartner Peer Insights Customers' Choice for Wired and Wireless LAN Access Infrastructure. Huawei is the only non-North American vendor named, and has a high 4.7/5 stars as of February 5, 2020 based on 196 ratings.

Gartner defines the wired and wireless access LAN infrastructure market as comprising vendors supplying wired and wireless networking hardware and software that enables devices to connect

to the enterprise wired LAN or Wi-Fi network. Gartner Peer Insights is an online platform of ratings and reviews of IT software and services that are written and read by IT professionals and technology decision-makers. Gartner Peer Insights includes more than 215,000 verified reviews in more than 340 markets. Gartner Peer Insights Customers' Choice distinctions recognize vendors that are highly rated by their customers, helping enterprise IT leaders make more insightful purchase decisions.

On Gartner Peer Insights, Huawei's campus network offerings received a total of 196 reviews from customers in various industries around the world. Customer feedback covers Huawei Ethernet switches and campus core switches, indoor and outdoor access point, cloud managed network platform, among other Huawei products. According to customer feedback, Huawei campus network products and solutions are highly recognized in terms of performance, reliability, and ease of management. ■

Technology for Everyone

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

Technology is at the heart of today's society, and yet it is not as inclusive as it should be. Achieving a world in which technology makes life better for every individual, every family, and every organization, requires a collaborative approach that focuses on not only technology distribution, but the development of applications and skills. By working together as a united information and communications technology (ICT) sector, and in partnership with the public and private sectors, we can bridge the digital gap to enable society to thrive as a whole in the age of intelligence.

The Earth is home to 7.5 billion people, but only half of the world's population has access to digital technology. In a world that is increasingly driven by digital technology, it is essential that we close the digital divide by working to empower the unempowered, so that everyone has the same digital rights.

Huawei believes that no one should be left behind in the digital world. Our TECH4ALL initiative centres on bringing partners together to develop digital inclusion and empowerment initiatives for the following four high-impact domains: environment, education, health and development. One of the key purposes of TECH4ALL is to accelerate the United Nation's Sustainable Development Goals (SDGs).

TECH4ALL has three core areas of focus: technology, applications, and skills. Through the technology focus, Huawei aims to make digital technologies affordable for developing regions with scalable, low-cost products, and solutions. The application focus aims to create digital ecosystems and help developers to build applications for different communities and industries. Last but by no means least, the skills focus sees Huawei work with local governments, communities, organisations, and other partners to improve society's digital skillset.

The benefits of pursuing an inclusive digital society go beyond simply providing people with 'nice to have' Internet access. There is

a clear correlation between technology and economic growth. Digitising public services is something that governments are actively pursuing not only because it makes sense by making processes more accessible and faster, but because good digital government can help businesses to flourish, increase citizen engagement, and provide a long-term boost to the economy. Digital government helps to make public institutions more inclusive, effective, accountable, and transparent, which in turn builds higher levels of public trust.

Technology also has the potential to increase social welfare and increases happiness, which has a positive knock-on effect on productivity. Happy people are, after all, more likely to be successful.

Connecting Remote Communities

A recent example of the power of connectivity can be seen in Mongolia, a vast but sparsely populated country with a widely dispersed population density of around 1.9 people per km². More than half of the population lives outside of cities and towns – and four in 10 rural dwellers are nomadic. Only 100,000 homes out of 850,000 have Internet access.

To address this, Huawei collaborated with Unitel to launch a wireless home broadband solution in 2017. The service, Ger Internet, delivers rural connectivity to remote areas of Mongolia. There are 50,000 homes currently using the service. Users are reaping tangible benefits, such as receiving up-to-the-minute weather forecasts and the latest farming techniques, helping them to increase productivity. Businesses are able to build websites, with results already showing an impressive 190% increase in profits in three months due to advertising and a wider customer base. Internet access enables users to access online medical consultations and learning, and is helping to bring families who live apart together – such as when Kuta, a rural-dwelling eight-year-old boy received a video call for the first time from his brother, who studies in Korea.

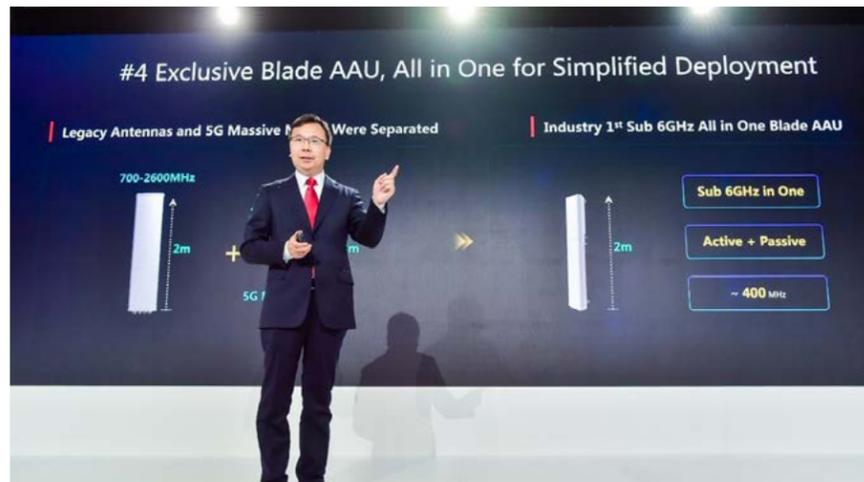


Bridging the Talent Gap

The benefits of a digital future can only be fully realised by professionals who have the skills and understanding to push the boundaries of technology further. At present a gulf exists between the number of job vacancies in the ICT sector and the engineers available to fill them – and the gap is widening. By 2025, 85% of business applications will be cloud-based, and 97% of large companies will use artificial intelligence (AI). However, there won't be enough qualified engineers to operate these technologies if we don't act now – which is where the Huawei ICT Academy, part of the TECH4ALL programme, comes into play. The ICT Academy operates in partnership with universities from around the world to address the talent gap by providing students with hands-on training in the latest technologies, providing them with the foundation to become the next generation of great innovators.

A connected world opens doors – and a properly skilled workforce can achieve incredible things in the digital age. Technology brings new opportunities that benefit whole societies as much as the individuals that live within them. People have the chance to thrive, and economies prosper as a result. We believe that inclusive technology is a universal goal. Together we can make a difference – Huawei's TECH4ALL is a collaborative initiative that seeks ways to ensure that technology can benefit everyone, everywhere. ■

Huawei releases new 5G products and solutions



Ryan Ding, Executive Director of the Board and President of Huawei's Carrier BG, has recently released Huawei's new 5G products and solutions while also launching the company's new 5G Partner Innovation Program. These efforts aim to build a thriving 5G ecosystem and make 5G a commercial success.

5G has developed beyond imagination in terms of deployment, ecosystem, and experience, says Ding, and networks are the foundation for the 5G business. So far, Huawei has been awarded 91 commercial 5G contracts. As a leading global 5G supplier, Huawei is committed to developing the best end-to-end 5G solutions. These will include the industry's highest-performance 5G base station that supports all scenarios. Huawei is also the first vendor in the industry to provide industrial 5G modules for vertical applications.

Ding emphasized that in the 4G era, virtually all operators provided the same network experience. However, in the 5G era, operators can provide differentiated experiences and charge users based on more metrics, including data volume, latency, bandwidth, and number of devices

connected. This makes it possible to monetize 5G, and it is critical that operators redefine their 5G business models now.

At the event, Ding also launched the 5G Partner Innovation Program. Through this program, Huawei plans to invest US\$20 million into innovative 5G applications over the next 5 years, contributing to a thriving 5G ecosystem and accelerating the commercial success of 5G. Huawei and its global partners have worked together on multiple 5G projects, covering many domains including new media, campus, healthcare, and education.

Peng Song, President of Huawei's Carrier BG Marketing and Solution Sales Dept, separately confirmed the release of a cutting-edge Huawei 5G network which is intended to help operators achieve commercial 5G success. It includes a series of product solutions, such as the simplified radio access network (RAN), smart IP network, ultra-high-bandwidth transport network, green connections, and AI-enabled end-to-end 5G services.

Looking to the future of 5G, Huawei and several industry partners also launched a 5GDN Industry White Paper this month.

Since the establishment of 5G Deterministic Networking Alliance (5GDNA) last year, this is the first time the 5GDNA has introduced 5G Deterministic Networking (5GDN) comprehensively, including definition, concepts, key technologies, and successful use cases of 5GDN. This release opens a new chapter for 5G development and promotes development of more network applications. An analysis of more than 100 applications in over 10 industries showed that the requirements of industry digitalization for 5G networks can be divided into three aspects: differentiated networks with orchestratable capabilities, dedicated networks with guaranteed data security, and self-service (DIY) networks with autonomous management.

In parallel, Yang Chaobin, President of Huawei 5G Product Line, has unveiled Huawei's 10 key enablers of 5G, including the full-series all-scenario ultra-broadband products and solutions to facilitate all frequency band evolution to 5G, and the innovative end-to-end super uplink and slicing solutions to help operators build full-service capabilities. These offerings are intended to better cater for end users, home users, and industry users to secure business success in the 5G era. ■



HUAWEI AppGallery – the officially launched app distribution platform of Huawei, provides new alternative to its users. As one of the top 3 app marketplace globally, HUAWEI AppGallery is now available in over 170 countries/regions with 400 million monthly active users (MAUs), covering mainstream apps and services worldwide.

Huawei's vision is to make HUAWEI AppGallery an open, innovative app distribution platform that is accessible to consumers, while it strictly protects users' privacy and security and provides them with a unique and smart experience.

Huawei has hundreds of millions of users worldwide, laying a solid foundation for the development of the ecosystem. Together with HMS Core, which opens a variety of Huawei software and hardware capabilities, Huawei is enroute to providing an innovative application experience for users. The company has invested in more than 3,000 engineers to develop apps for the HUAWEI AppGallery and invested US\$1 billion in developer incentives.

Huawei has also deployed a series of privacy security measures oriented to all life scenarios, tailored to diverse, intelligent lifestyle needs, and in accordance with the

promise "Privacy, under your control".

A Trusted Platform based on User-Controlled Privacy for top quality apps:

The new HUAWEI AppGallery deploys the highest level of verification to isolate and protect users' sensitive data and privacy. Personally-sensitive information – such as biometric data – will never be processed outside the Huawei device, giving the user complete control over their personal data. EMUI lets users have control over app user permission. More importantly, all user data is also anonymised and stored locally, corresponding to each user's region. In addition all apps go through a stringent verification test to prevent developers' apps from malicious activity. The platform has also implemented an app rating system worldwide.

In order to cater to user demands, Huawei is constantly working on increasing the selection of top apps that have become a necessity for users' digital lifestyle, be it global or local applications. The platform currently segments applications across 18 categories news, social media, entertainment and more which can be easily found. If there is an app that users can't find, they can add it to the 'Wishlist', which will

notify them once the app is available.

Optimized for Huawei devices and Quick Apps feature

HUAWEI AppGallery comes pre-installed in the devices. Apps downloaded from the platform are optimized to work on Huawei devices, providing an incredible on-device capability, mutually reinforcing interactions between software and hardware resources.

Co-developed by Huawei and other brands, Quick App is an app ecosystem that houses a new type of installation-free apps. It provides a good user experience, powerful functions and automatic updates for HTML5 pages, but consumes very little memory space. Despite giving users the same experience as native apps, Quick Apps are written with only 1/5 amount of codes as compared to that of Android apps, therefore taking up less memory space. Users can accommodate more than 2,000 Quick Apps instead of just 20 native apps with just 1GB of space. Users can also add their favourite Quick Apps to their desktops or access the app via the Quick App Centre for convenient access. In the 5G era, Huawei strives to create a more convenient and efficient lightweight application experience and provide users with more options. ■



Huawei unveils industry's first deterministic networking oriented 5G core network

Huawei recently unveiled the industry's first deterministic networking oriented 5G core network solution, pivoting on the key concept of "Cloud Native, One Core, Real-time Operation, and Edge Computing". The solution further helps to accelerate the commercial launch of 5G around the world, delivering a superior service experience to individuals, families, and enterprises.

The solution provides differentiated connectivity and SLA assurance to empower all industries in a digital era. "5G deterministic networking is the key to industry digital transformation. Huawei will work with industry partners to promote industry consensus, accelerate industry development, promote service innovation, build an industry ecosystem, and drive new 5G business opportunities", said Ma Liang, Vice President of Huawei Cloud Core Network Marketing Dept.

Within the 5G realm, Huawei also launched a number of other flagship solutions and products:

- **Industry's First Site Digital Twins Based 5G Digital Engineering Solution**
It is the industry's first ever solution which works on the idea of site digital twins proposed by Huawei. The solution creates a digital replica of a physical site, enabling digital operations on the digital site, completely overhauling the traditional delivery model to accelerates 5G rollout.
- **First-ever 5G Service Experience-Based Network Planning Criteria**
The criteria can help carriers cope with the

new challenges of differentiated experience requirements of new services in the 5G era. They will enable carriers transform from network planning based on traditional telecom services to precise network planning based on digital service experience. In this way, carriers' network planning is more efficient, and their investment is more accurate while providing high-quality experience for 5G users.

- **Industry's First end to end 400GE Routers with Committed SLA**
Huawei launched the NetEngine 8000 series, the industry's first end to end 400GE routers oriented towards the 5G and cloud era, which redefines the intelligent IP network with ultra-broadband and committed SLA. NetEngine 8000 is the industry's first platform to carry full services, such as 5G mobile, home broadband, private lines, and cloud, which helps operators build a simplified network with optimized investment.
- **5G modules based on HiSilicon's pre-module Solution**
Huawei has partnered with Quectel, Changhong Holding Group, AI-Link, China Mobile Group Device, and Smart Chip to launch 5G industrial modules, 5G+8K media modules, 5G electric power modules and more modules, accelerating the adoption of 5G in various scenarios, including smart manufacturing, multimedia, commercial display, large wall-mounted screen, energy, and transportation.
- **Industry's First Monetization Solution for 5G SA Network**

Huawei has launched Convergent Billing System (CBS) R20 – the industry's first ever 5G SA network-based monetization solution. The solution has already been deployed over the stc Kuwait 5G SA's network, where as the "Dedicated Access" was offered to enterprises with guaranteed Service Level Agreements (SLAs).

- **SingleFAN Pro Solution upgrade to Boost Gigabit Full-fiber Broadband Development**
Huawei announced it has upgraded the Huawei SingleFAN Pro solution. The solution provides a series of sub-solutions, including AirPON, BusinessPON, CurbPON, Digital QuickODN (DQ ODN), embedded AI (eAI) ONT, and Flex-PON (A-B-C-D-E-F), to help global operators deploy gigabit full-fiber access networks in various scenarios.

- **Single Voice Core Solution**
Huawei has launched the Single Voice Core solution recently to provide voice services for 2G, 3G, 4G, 5G, and fixed-line subscribers. The solution helps carriers integrate different voice networks, expand new voice services, and build voice infrastructure networks in the 5G era.

Separately, Huawei's 5G LampSite won the iF DESIGN AWARD at the 2020 iF International Industrial Design Forum. This is the second time in a row Huawei's LampSite family has achieved this prestigious award. This demonstrates the LampSite family's unwavering pursuit in achieving a high quality, user-friendly design enabling perfect adaptation into its surrounding environments, and further displaying Huawei's strong commitment into R&D. ■



Etisalat Open Innovation Centre welcomes university students during UAE Innovation Month

Etisalat's ultramodern Open Innovation Centre welcomed students from UAE universities, as well as a French graduate business school, as part of its activities to mark the UAE Innovation Month.

The UAE Innovation Month was celebrated in February under the theme "The UAE Innovates in Preparation for the Next 50 Years". Etisalat Digital's team led the tour of the Innovation Centre, a first of its kind in the region showcasing digital innovation, its capabilities and how digitalisation can come to life for Etisalat customers and partners.

Students from Zayed University, American University of Ras Al Khaimah and Grenoble Ecole de Management learned about the value proposition of Etisalat Digital and an overview of its portfolio. Other interesting topics of discussion included Artificial Intelligence implementation and creation; the importance of infrastructure, cyber security attacks, the Big Data platform, a predictive analysis in Internet of Things (IoT); and the role of Augmented Reality in businesses.

Etisalat is committed to supporting educational institutions and fostering innovation among students. This initiative is part of Etisalat's ongoing efforts to support and develop the education sector in the UAE, and is aligned with the UAE Vision 2021, where the national innovation strategy has



identified digital technology as one of the top seven primary national sectors.

Prof. Hany Al Kadi, Dean of Technological Innovation College of Zayed University, said: "We, at Zayed University, focus on teaching our students the highest standards of applied practices in their fields by allowing them to learn from innovative experiences inside and outside the campus. This visit to Etisalat Innovation Centre enables them to look at the use of the latest technologies such as IoT and cloud solutions. They get to realistically experience how what they study is being applied and clarify their expectations of the work environment."

Dr. Abdul-Halim Jallad, Director and Assistant Professor of American University of Ras Al Khaimah's Center of Information, Communication and Networking Education

and Innovation, said: "We are delighted to have students and faculty from the School of Engineering at AURAK visit the Etisalat innovation centre. Students were able to see and experience real-life demonstrations of modern technologies they study and read about such as Internet of Things, Virtual Reality and cloud-based systems. We look forward to continue the collaboration and communications between AURAK and Etisalat and even expanding it over various other venues."

The Open Innovation Centre, which opened in December 2017, highlights all the key digital technologies that will give businesses the capability to drive the digital future. Etisalat's corporate strategy is focused on 'Driving the digital future to empower the society' across our customers and enabling them with solutions on this digital journey. ■

Etisalat signs agreement to boost digital transformation at Arabtec



Etisalat has entered into a strategic partnership with Arabtec to provide fully digitalised solutions in a bid to accelerate its digital transformation journey.

Etisalat will be digitalising Arabtec's workforce, migrating its datacentre to the Microsoft cloud, all the way to automating its existing process with Etisalat's Robotic Process Automation (RPA) journey. RPA is the use of software with artificial intelligence (AI) tools to automate high-volume and repetitive manual tasks that previously required human input.

Under the partnership, Etisalat will enable Arabtec to drive into the modern workplace by migrating its workforce to Office 365 and move its digital infrastructure to the Azure cloud.

Utilising Etisalat's IoT workforce management solution, Arabtec will digitalise time and labor processes, simplify absence management

and enable strategic business insights at construction site. Etisalat will also digitalise Arabtec's existing process by introducing robotics to the workplace, resulting in improved efficiency, higher productivity and greater project completion rates.

Salvador Anglada, Group Chief Business Officer, Etisalat, said: "We are pleased to offer a wide range of digital solutions to Arabtec, one of the leading construction companies in the UAE, and set a benchmark in the construction sector. Through this strategic partnership, we, at Etisalat, look forward to empowering Arabtec with the latest digital technologies and smart solutions aimed at increasing operational efficiency, brand reputation and recognition."

Peter Pollard, Group CEO, Arabtec, said: "We are excited to announce our strategic partnership with Etisalat. A partnership intended to drive forward our digital transformation journey by digitising Arabtec's

workflows and processes, introducing along the way Artificial Intelligence tools and smart solutions to further improve our productivity, efficiency, and project delivery. This partnership aligns with Arabtec's core strategy in many fronts, accelerating our digital transformation, creating great experiences, and unlocking productivity."

"With an ever-increasing requirement of cloud adoption, our very first Middle East datacentres launched in the UAE promises intelligent cloud technology to soar across industries and leverage a range of groundbreaking innovations which help in better customer engagement, empower employees, optimise operations and transform products and services," said Sayed Hashish, Regional General Manager, Microsoft UAE. "Microsoft and Etisalat shares a vision of enabling organisations like Arabtec to accelerate their digital endeavors and empowering them to be agile, lower service latency and ensure better performance." ■

Globecast hails Infrastructure as Code as a cloud gamechanger and initiates deployment

Globecast is hailing the emergence of Infrastructure as Code (IaC) as a gamechanger for the media entertainment industry and has begun deployment of the technology.

IaC is the process of creating and managing cloud-based technologies using scripts – hence code – to do so. The script is then "read", or accepted, by systems like AWS' CloudFormation or the cloud-agnostic solution from Terraform. The systems created using IaC can be as simple or as complex as required i.e. entirely cloud-based complex playout infrastructure can be generated far more quickly and cost-effectively via this method.

Ian Redgewell, Head of Media Management, Globecast, said, "Take the example of deploying a new cloud-based platform for a customer using Infrastructure as Code. Everything that needs to happen – the 50 servers we need, the software we need to run on those servers, the network, all the IP addresses, the user accounts, the security permissions

– all of these can be written into a single document using the correct code. That is then run through the aforementioned systems and the infrastructure is created."

While there is, of course, the time taken to create the code, this process removes any on-premise installation work and, increasingly more relevant, removes the complex, multifaceted manual processes of cloud service creation. There are three other clear benefits: changes to any platform/service, or security patching, can be easily handled by editing the code, with the changes then instantly made; once a system is up and running, it can be taken down in a matter of seconds; it can then be redeployed as required for another service launch or ad-hoc event almost instantly. One-off sporting events are a prime example of where the benefits of this will be seen.

Globecast has already deployed IaC, initially for a relatively simple project, allowing providers of advertising content for a Globecast playout customer to simply

hit a button to feed relevant commercials via the cloud to a variety of landing areas for insertion by Globecast. This means the ad providers don't have to install any proprietary software (which will vary from playout provider to playout provider) and don't have to use older technologies, FTP being the prime example. This allowed Globecast to implement the system in a tiny fraction of the time it would previously have taken. It is also allowing Globecast to easily manage any changes in ad providers in a matter of minutes each time.

Redgewell added, "We see IaC as critical in maximising the potential of the cloud. It's a genuine gamechanger. This is the way to work as we move forward. The speed-to-market advantage is huge, as is the cost saving. And the ability to re-use entire systems is a massive step. The cost saving potential is further heightened by this. We are talking about the deployment of very complex solutions, maintaining them, easily making changes and removing whole systems or redeploying them in minutes." ■

Ayrus Global recognised as Academic Excellence & Innovation Partner

AYRUS - Global brand in advanced security system from USA successfully set up Academic Innovation centre in A. P. Shah

Institute of Technology. AYRUS is having The comprehensive range of products & solutions for monitoring & securing millions

of People & Facilities across the Globe. It offers an extensive portfolio of high quality products, solutions and services featuring intelligent functionality and modular concepts which enable us to deliver the best Value Proposition & Solutions to our valued clientele.



AYRUS products serve a diverse set of vertical markets that includes retail, banking and finance, transportation, education, commercial, government, and residential applications. AYRUS is dedicated to providing global resources with local technical, sales and service supports to its valued customers. With remarkable presence in 43 countries along with 9000+ strong partner network. ■

Pléiades Neo well on track for launch mid-2020

The first two Airbus-built Pléiades Neo imaging satellites have started comprehensive environmental testing, to ensure they are ready for in-orbit operation.

During the tests, the satellites are subjected to extreme temperatures and vacuum, vibration and acoustic noise, as well as electromagnetic interference. This will ensure they can withstand the harsh conditions they will experience during launch and their mission in orbit.



high-resolution satellites are on schedule for launch as planned in mid-2020. They will join the already world-leading Airbus

constellation of optical and radar satellites, improving both the revisit and resolution capacities. Entirely funded, manufactured, owned and operated by Airbus, Pléiades Neo will provide institutional and commercial customers with high-level insights for the next 12 years. Each satellite will be adding half a million km² per day at 30cm resolution to Airbus' offering. The images will be streamed into the OneAtlas on-line platform, thanks to an innovative cloudbased ground segment architecture, allowing customers to have immediate access to freshly acquired and archived data as well as analytics. ■

These first two new-generation very

Speedcast launches global standardized SD-WAN solution

Speedcast has launched an advanced software-defined wide area network (SD-WAN) solution that seamlessly blends satellite, LTE, wireless and fiber technologies. Designed for onshore and offshore users, the solution provides customers with high performance and dynamic access to applications across networks, with greater ease of use and lower cost than traditional network management systems.

As networks and satellite connections grow, network management becomes crucial to ensure seamless business operations. Customers require mission-critical communications combining different WAN link technologies to maximize their available bandwidth and application uptime while streamlining costs. Speedcast has simplified link management by introducing a best-in-class SD-WAN solution. With all disparate WAN links configured inside a secure conduit, Speedcast SD-WAN simplifies routing through a single, end-to-end solution that dynamically routes traffic across the best available links and aggregates the bandwidth to maximize throughput. It offers the highest uptime availability and allows users to maintain a high quality of experience even at over 90% link bandwidth utilization.

"Having a modern, reliable network is critical for our offshore and onshore customers' operations and digital transformation strategies," said Tim Bailey, Executive Vice President, Products, Marketing and Business Development, Speedcast. "Speedcast SD-WAN is the ideal solution for increasing the availability, stability and bandwidth of our customers' remote site connectivity while delivering a better end-user experience and improved operational efficiencies. The launch significantly strengthens Speedcast's capability to deploy and manage innovative solutions that address our customers' needs." ■

Hispasat extends cellular backhaul in America

Hispasat has sealed new agreements and contract renewals to provide dedicated satellite capacity to extend mobile networks in Latin America. In particular, the operator is consolidating its important role as a provider of these services in the Americas, where it offers connectivity to more than 2,400 base stations, distributed across the United States, Mexico, Brazil, Peru, and Ecuador along with providing service for the first time to Chile and Colombia over the last few months.

Additionally, Claro and HISPASAT will use base stations to provide connectivity to 250 rural Argentine communities after the agreement between the two companies was announced last week. HISPASAT is thus extending its business activity to three new countries in the Americas.

The cellular backhaul services who provide the satellites represent a highly interesting solution for mobile telecommunications companies who want to extend their connectivity in areas where terrestrial infrastructure roll out has geographic difficulties or is not viable in economic terms. Thanks to a satellite connection, it is possible to connect remote areas to the global mobile network, thus optimising economic investment and ensuring the capillarity that this type of communications needs.

The implementation of 4G technology and the arrival of 5G will lead to a growth in the demand for these backhaul services. As such, this type of satellite solution is especially ideal for regions like Latin America, with very large countries, challenging geographic features and less-developed terrestrial communication infrastructures in certain areas. Specifically, market studies predict that the demand for geostationary satellite capacity for backhaul services in the region will increase by 21% in the period from 2018-2028. ■



Honeywell, Saudia Aerospace Engineering Industries lead the way in aircraft maintenance



Saudia Aerospace Engineering Industries (SAEI) and Honeywell have completed more than 100 auxiliary power unit (APU) repairs from its Jet Propulsion Center in Jeddah, Saudi Arabia. SAEI is the only Honeywell certified service centre in the Middle East region that provides maintenance, repair and overhaul (MRO) services on Honeywell's

GTCP 331-500 and 331-350 APU models.

With SAEI, Boeing B777 and Airbus A330 operations with Honeywell APUs receive MRO services in the Middle East. This means that the operators do not have to leave the region for repairs, which helps to eliminate logistical inconvenience, reduces downtime,

saves costs and improves operational efficiency.

This capability strongly positions SAEI in achieving the Saudi Vision 2030, part of which aims to localize more than 50 percent of military equipment spending by 2030 and includes covering MRO services for fixed and rotary-wing military aircraft.

Honeywell is the largest global manufacturer of gas turbine engines. Its first APU took to the skies in 1950, and the company has built more than 100,000 since. More than 36,000 are in service today across more than 150 regional, executive, commercial and military applications, including both fixed wing and rotary wing.

SAEI began its collaboration with Honeywell in 2013 as part of Saudia Group's SV2020 Transformation Strategy, which aims to elevate the company's business units into leading organizations by 2020. With completion of over 100 APU repairs, SAEI has met its business objectives set under SV2020 Transformation Strategy and has renewed focus to realize Saudi Vision 2030. ■

stc crowns the winners of the “Saudi Cup” ... The most expensive horse races in the world

Provided \$ 2.6 million awards in “Jockeys’ Challenge” Competitions and “1351 stc” Cup



Chairman of stc Board, HRH Prince Mohammad bin Khaled bin Abdullah Al-Faisal Al Saud handed over a million-dollar prize to the rider Dark Power, winner of “stc 1351 Cup” race, owned by Al-Adiat Stables of Sheikh Issa from the Kingdom of Bahrain, in the presence of the Minister of Sports, HRH Prince Abdulaziz bin Turki Al-Faisal.

14 international riders competed in the race sponsored by stc. The Competition is named after stc and the date of founding the Kingdom of Saudi Arabia, as part of the activities of the “Saudi Cup”, the most expensive horse race in the world.

stc sponsorship of this major national event is in line with its central role in enabling the digitization of the public and private sectors in the Kingdom and enriching people’s lives with digital solutions according to its “Dare” strategy for digital transformation and growth on new routes.

stc sponsored yesterday the 4-round “Jockeys’ Challenge” race, with prizes totaling \$ 1.6 million, \$ 400,000 per round. The winner riders received “Dare” Race Cup awards by the Director General of Corporate Communications, Eng. Muhammad Aba Al-Khail, 5G Cup by the Director General of Marketing Communication of Consumer Sector Unit, Ahmad Al-Sahaf, Cloud Computing Cup by the Director General of Marketing Communication of Business Sector Unit, Omar Al-Fayez, and stc pay Cup by the Director of Tomouh Program, Abdel Rahman Al Sagheer. ■



Airbus introduces pioneer hybrid base station for Tetra and LTE



such as the integration of multicarrier remote radios. The TB4 plays a key role in Airbus’ ecosystem approach; it is based on Nokia’s AirScale base station platform and will enable its customers to benefit from a long Tetra lifecycle and a smooth evolution toward wireless broadband.

Customers will immediately notice the benefits of this new solution. Their power consumption will decrease, and their flexibility will increase thanks to the extensive network coverage and use of mainstream technology standardised by the 3rd Generation Partnership Project (3GPP), adapted for Tetra. They will also be able to benefit from the higher integration and longer operational life for networks operating in 2030 and beyond.

Airbus has introduced its brand new TB4 base station for the first time in the Middle East North Africa (MENA) region. TB4, the very latest innovation in the evolution of Tetra towards 4G/5G technology, and the first hybrid base station that supports both Tetra and 4G/5G technology on the same hardware platform, is being used by the Professional Communication Corporation – Nedaa, Dubai’s Government security networks provider; the first customers for this solution.

powerful features as the popular Tetra TB3 base station, and much more. These features include dual homing, air-interface encryption, and base station fallback. The smaller-scale base station is fully compatible with its previous version. It sets a clear path from Tetra towards 4G/5G use since the high-tech system module supports both Tetra and LTE access. In addition to features such as an Air-Interface Encryption, a type 1 handover, and base station fallback, it provides advanced security capabilities.

Small scale, and fully adaptable, the new Tetra base station carries all the same

The TB4 also provides the very latest technology from cellular network solutions,

Moreover, customers who are currently using the TB3 can conserve the same antenna configurations for use with the TB4 which will enable a smooth transition towards 4G/5G networks, with significant cost savings in network planning and implementation.

The modern base station is initially made available for a 380 MHz frequency and is implemented according to the Airbus hybrid strategy, thus ensuring customers a smooth technological evolution. ■

CommScope delivers open interfaces and virtualization for small cells

CommScope announced open interfaces, virtualized RAN functions, and new radio points for its OneCell small cell to provide an innovative and open approach for operators to deploy 5G networks in enterprises and venues.

The enhanced OneCell solution leverages

the latest open RAN and management frameworks to deliver in-building wireless services – a traditionally under-served use case but one that will be critical for operators to address enterprise needs.

“CommScope fully supports open interfaces to stimulate innovation,” said Upendra

Pingle, vice president of Distributed Coverage and Capacity Solutions for CommScope’s Venues and Campus Networks segment. “We are delivering solutions for in-building cellular coverage that enable operators to realize the potential of their 5G networks for all types of subscribers and use cases.” ■

Infinet Wireless delivers state-wide wireless public security network in Mexico

Following the successful deployment, Infinet Wireless' innovative solution has now become the new wireless communication standard in the state of Zacatecas.

Infinet Wireless has successfully installed a new high-capacity wireless infrastructure to improve public safety and expand its geographical coverage in the Zacatecas state, located in north-central Mexico.

Infinet Wireless has provided connectivity to around 150 locations in numerous municipalities in the state, further enabling the local authorities and law enforcement agencies to provide dynamic monitoring of the streets and neighbourhoods, emergency care wherever it is needed, enhanced citizen protection, and connecting the REPUVE public register of vehicles with all relevant command and control centres.

Infinet Wireless was selected to deliver the project following a decision from the Executive Secretariat of the State Public Security System (SESESP), which is responsible for citizen safety and security in the entire state, with the main objective being a major technological overhaul and renewal to ensure the safety of residents and visitors to the region.

"SESESP required a solution which could address the limitations of the legacy wireless platform we had, make more efficient use of the limited radio spectrum available, mitigate radio interference generated by third party and rogue base stations, as well as significantly improve the reliability of our camera feeds even in the highest density locations," said Jaime Francisco Flores Medina, Executive Secretary of SESESP of Zacatecas state. "These were critical criteria for SESESP, and Infinet Wireless was able to provide a reliable solution which met and exceeded our expectations, as well provide much easier installation and maintenance." One of the key challenges faced by SESESP was to ensure that its subsidiary, The Center for Integral Coordination, Control,



Command and Communications (C5), could have access to dynamic and comprehensive visibility at the street level, enabling quick decision-making on all matters related to public safety, medical emergencies, the environment, civil protection, fluidity of road traffic and the provision of various services to the community at large. Gathering and sharing real-time information from a multitude of sources presented a real challenge, especially as the collected information needed to be subsequently distributed to various monitoring and control centres spread across the state.

"This was a project with understandably very stringent requirements due to the mission-critical nature of SESESP's work protecting the state's citizens and visitors. As the eighth largest state in Mexico, there were obvious geographical challenges in order to connect more than 150 locations across Zacatecas," said Carlos de Lamadrid, Regional Business Development Manager for LATAM at Infinet Wireless. "Our years of experience developing state-of-the-art wireless solutions, able to not only operate in the most diverse climatic conditions and terrain topologies, whilst delivering bandwidth-intensive applications in real time, allows us to deliver SESESP with a solution that is helping the state continue its critical work safeguarding its citizens and

entire communities." Infinet Wireless designed and implemented the network based on its R5000 product family, which includes Point-to-Multipoint (P2MP) solutions as well as Point-to-Point (P2P) ones. The new platform provided the necessary bandwidth and capacity, with room for future growth, for crucial systems all aimed at improving people's lives, ensuring their security wherever they are and significantly preventing and ultimately reducing crimes of all types.

Ultimately, SESESP is now able to rapidly gather all relevant information from all corners of the state, then share it with various authorities in order to take preventive actions as well as remedial ones whenever necessary.

Infinet Wireless completed the project with the help of its local partner Compulogic S.A. of C.V. This new infrastructure has now become a wireless reference for all other states interested in deploying similar platforms. Compulogic has been operating in the Zacatecas state for over 25 years and delivered multiple communications and IT projects in various regions of the country for different sectors of the industry, including education, health, private initiative and public safety. ■

Eight in 10 businesses believe impact of 5G will be significant but security concerns persist, Accenture

Businesses believe that 5G will be the most revolutionary network evolution yet but still have concerns about the technology's security, according to Accenture.

Based on a survey of more than 2,600 business and technology decision makers across 12 industry sectors in Europe, North America and Asia-Pacific, the study found that four in five respondents (79%) believe that 5G will have a significant impact on their organization — including 57% who believe that it will be revolutionary. In contrast, only one-quarter (24%) of respondents said they believed that 4G's impact was revolutionary.

However, this optimism doesn't eclipse security concerns around 5G, which have grown slightly over the last year. Specifically, more than one-third (35%) of respondents in the most recent survey expressed concerns around the security of 5G, compared with 32% in last year's survey. In addition, more than six in 10 respondents (62%) in the latest survey expressed fears that 5G will render them more vulnerable to cyberattacks, and businesses believe that most of the risk will begin at the user level, whether that's devices or people.

"The link between 5G and its perceived security risks is complex," said George Nazi, senior managing director and Communications and Media industry lead at Accenture. "According to our study, executives believe that 5G can help secure their businesses, but that 5G network architecture also presents inherent challenges in terms of user privacy, number of connected devices and networks, and service access and supply chain integrity." The survey suggests businesses are thinking ahead to how to deal with these challenges, with three-quarters (74%) of respondents saying they expect to redefine policies and procedures related to security as 5G emerges.

5G costs and outlook



The cost of accommodating the changes that 5G will bring is also weighing on business leaders' minds. In particular, the cost of operationalizing 5G is a hot topic, and four in five respondents (80%) believe that the cost of managing their IT infrastructure and applications will increase. Meanwhile, nearly one-third (31%) still think that the upfront cost of implementing 5G will be too great.

In addition, the study found that businesses are beginning to realize that they require external support to unlock 5G's potential. For instance, nearly three-quarters (72%) of respondents said they need help to imagine the future possibilities for connected solutions with 5G, and the percentage of businesses expecting to develop 5G applications in-house has dropped over the last year, from 23% in the prior-year survey to 14% this year.

The survey findings indicate that, despite the challenges of 5G, the future looks bright for businesses embracing the technology, with businesses globally recognizing its huge potential. The benefits are numerous, and awareness of them is growing. For instance, 85% of respondents said that they expect to use 5G to support mobile employees in the field within the next four

years, up from 68% who said the same in last year's survey.

"With the right business strategy and ecosystem collaboration, the signs point towards a world of compelling 5G use cases and business outputs," said Nazi. "Communications service providers should act now to ensure they are at the heart of the 5G ecosystem to unlock the potential growth."

Methodology

Loudhouse Research, on behalf of Accenture, conducted interviews with 2,623 business and technology decision makers in December 2019 across 12 industry sectors in the United States, the United Kingdom, Spain, Germany, France, Italy, Japan, Singapore, the United Arab Emirates and Australia. The aim was to develop an accurate picture of business' understanding of 5G, how they have adopted it so far, and what they perceive its potential impact to be. The interviews featured questions repeated from research published in 2019 — conducted in November and December 2018 — about the same topics, taking a deeper dive into security, consulting and monetisation this year. ■

Ministry of Economy & Dubai Customs inaugurate first International Innovation Forum

The inaugural edition of the International Innovation Forum, a joint initiative by the Ministry of Economy and Dubai Customs in connection with the UAE Innovation Month was held at the Ministry of Economy in Dubai. The innovators and inventors at forum from inside and outside the country interacted with the relevant authorities from research centers, business incubators and private sector companies.

The Forum was opened by H.E Eng. Mohammed bin Abdul Aziz Al Shehhi, Undersecretary of Economic Affairs in the Ministry of Economy; and H.E Ahmed Mahboob Musabih, Director General of Dubai Customs; in the presence of senior officials from both entities in addition to a number of representatives from other governmental and academic authorities.

The week-long Forum featured 40 innovative projects. It hosted dialogue and discussion sessions on applications of Artificial Intelligence (AI); modern innovation methodologies; intellectual property (IP) rights; patent mechanisms and procedures; and other areas related to the development of an environment that promotes innovation and empowerment of owners of innovative projects, to help enhance their competitiveness.

In his opening speech, H.E Al Shehhi emphasized the Ministry of Economy's keenness to strengthen cooperation frameworks with its strategic partners to promote and spread the culture of innovation and creativity in the society, as innovation has become a key necessity for economic development and the improvement of the quality of the life for individuals. It is also important for the development of institutions and remains a major pillar in the UAE's efforts to prepare for the next 50 years by maximizing development opportunities and finding innovative solutions to challenges in various sectors, he added.

Al Shehhi said that the UAE's efforts to support the innovation system cover a wide array of sectors that represent the future,



such as applications of AI and other Fourth Industrial Revolution technologies, research and development, intellectual property, entrepreneurship, and various creative activities. The UAE believes in the importance of human capital with creative talent and a flair for innovation in driving progress and development, which is essential to achieve the goals of the UAE Vision 2021 and the UAE Centennial 2071.

H.E Ahmed Mahboob Musabih praised the launch of the first International Innovation Forum organized by MOE in cooperation with Dubai Customs in connection with the UAE Innovation Month 2020, which brings together innovators from various sectors such as education, and the public and private sectors under one roof to showcase their latest innovations and inventions. Such innovations fall in line with the National Strategy for Advanced Innovation and create more awareness on the importance of creativity and innovation, in addition to enriching the dialogue on our governmental experiences in this field. He further pointed out that the forum acquires more significance in the year of 'Towards the next 50,' as it reflects integration and cooperation between the federal and local governments in spreading the culture of innovation in the UAE society across various segments.

He said: "The UAE has become one the most interesting countries in creativity and

innovation, as our experience in innovation has crossed the country's boundaries and has moved to the global level, thanks to the constant guidance of our wise leadership and the future vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai. His Highness has emphasized that innovation is the future of the government and of the community's way of life. Reflecting the success of our efforts in this regard, the UAE leads the Arab countries according to the Global Innovation Index for the year 2019 and climbed two spots to become 36th globally."

Dubai Customs became the first entity in the country to receive this global award, based on the new award criteria in 2019, and Dubai Customs continues to lead in terms of innovation in the global customs sector. The department accomplished an unprecedented achievement globally of being classified as a pioneer institution in innovation by the International Institute for Innovation in the United States. Dubai Customs became the first customs department in the world and the Middle East to receive this recognition.

Over the coming days, the Forum will witness several sessions with the participation of speakers from the Ministry of Economy, Dubai Customs and the United Arab Emirates University in addition to experts specializing in the areas of entrepreneurship, AI and innovative government services. ■

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SAMENA Council announces postponement of Leaders' Summit 2020 to late June

In consideration of current travel restrictions announced across organizations, and requests received from private and public-sector industry leaders invited to participate in the Leaders' Summit 2020, SAMENA Telecommunications Council announces that the annual leadership gathering of business leaders and regional change-makers, originally scheduled to take place in Dubai on April 9th, will now be held later in June 2020. SAMENA Council will announce the new date in the coming weeks.

The agenda of the Leaders' Summit 2020 is centered on bringing Telecom and non-Telecom industries together to hold cross-industry discussions in order to build the case for 5G investments and to see how telecommunications technologies, especially 5G and associated technologies, can catalyze infusion of other industries across all walks of citizen life and layers of the human society in a wholesome, smartly integrated and beneficial manner.

However, in view of the prevailing

health situation, SAMENA Council feels its fundamental objective of ensuring its Leaders' Summit's signature-class, comfortable business conference ambience for SAMENA Council Members, policymakers, business decision-makers, and experts, invited to delve into important discussions, may not be fulfilled. Thus, despite having put in place comprehensive health measures, it has been decided to take all constructive feedback from Members and the Industry into account and officially announce the postponement of the Leaders' Summit 2020.

CEO of SAMENA Council, Bocar BA, has stated that "For us to have a productive cross-industry dialogue with concerned decision-makers, it is absolutely essential that all concerned stakeholders are physically present during the power-packed discussions we have planned for the Leaders' Summit 2020. It is, however, equally important to us that inclusiveness as well as well-being of all industry leaders are ensured. SAMENA Council always

endeavors toward fulfilling both of these objectives in all its leadership gatherings. I feel that our decision to postpone the leadership gathering from April to end of June, tentatively, will meet the approval of the Industry. SAMENA Council will communicate on this slight change in plans with invited personalities on an individual basis."

The SAMENA Council Leaders' Summit is an annual leadership event, encompassing private and government sector leaders' gathering, business networking, innovation exhibition, various bi-lateral closed-door meetings among CEOs and Regulators, and expert panel discussions, held among stakeholders in business-conducive ambience. To be held under the theme "Harnessing 5G Across Industries", Leaders' Summit 2020 will take discussions from earlier editions of the Leaders' Summit forward toward ensuring inclusiveness of other industries and verticals as the global Digital Economy evolves with the help of 5G technologies. ■

Artificial intelligence supports business development across Moscow

More than 167,000 suppliers are subscribed to receive personalized emails from the government of Moscow's 'Supplier Portal' site. The email alerts, which are generated using artificial intelligence, were launched in December 2017. Those registered to receive the alerts are kept up to date about various business opportunities across a range of sectors.

"Through the use of AI, we analyze relevant data to generate personalized, digital news bulletins, detailing the most relevant and interesting procurement news. By doing so, suppliers are kept abreast of both current

and upcoming business opportunities," commented Eduard Lysenko, Minister of the Government of Moscow and head of the Department of Information Technology.

Monthly Internet resource grows by about 4 thousand users. Today, through the application of artificial intelligence, individuals can generate a list of suppliers and contractors related to their sector and download their contact information, supporting them in their business development activities. Meanwhile, the development team behind the portal is continuously working to improve overall

functionality.

The average conversion rate of the digital newsletters, calculated over the last two years, is more than 7.3 percent. That is, of the 167,000 suppliers who received the personalized email, 12,000 individuals clicked through to review supplier offers. The conversion rate has close to doubled during the second year that the service has been available. In comparison, the average conversion rate for such digital newsletters is between 2-3 percent, according to a study completed by the MailChimp platform in October of last year. ■



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Ooredoo Qatar to use Nokia AI-powered customer engagement solution towards monetizing 5G

Nokia has announced that Ooredoo Qatar will soon complete the deployment of Nokia's customer engagement solution to improve digital experiences by using analytics to better understand customer needs and to recommend and automatically trigger the next best action for a more relevant offer for the subscriber. Once deployed, the solution will allow Ooredoo Qatar to enhance revenue by using contextual information for more targeted and personalized real-time campaigns. With this, Ooredoo Qatar's three million subscribers will benefit from a better service experience.



Nokia's solution comes with artificial intelligence capabilities that process and analyze the customer data in real-time. It helps the service provider to offer the right service at the right moment. The Nokia solution will enable Ooredoo Qatar to reduce the time to introduce new services and promotions to its subscribers from days to minutes. Thus, it is now possible for Ooredoo to send, for example, an offer to a specific target audience immediately after a sporting event finishes. 5G technology opens up new revenue opportunities for the service providers. Nokia's customer engagement solution enables Ooredoo Qatar to prepare for the digital era to better monetize 5G in a

highly competitive market. Nokia's solution will allow Ooredoo Qatar to generate more value from customer insights and provide the best offer through the right channel at the right time when the subscriber needs it. Yousuf Abdulla Al Kubaisi, Chief Operating Officer, Ooredoo Qatar, said: "Taking our partnership with Nokia to the next level will ensure that we will deliver the world's most advanced 5G solutions and services that can enhance our customer engagement and their digital lives. By combining 5G with artificial intelligence, we will deliver

targeted, personalized, and real-time campaigns that can provide our customers with the right services and solutions at the right time." Henrique Vale, Head of Nokia Software for MEA, said: "Communications service providers like Ooredoo Qatar need to modernize their infrastructure to better address the evolving needs of their customers. We are committed to supporting telcos to monetize their assets and digital events. Nokia's solution will enable Ooredoo Qatar to enhance customer experience and to add new revenue streams." ■

Ooredoo Qatar deploys Ericsson Spectrum Sharing



Ericsson and Ooredoo Qatar have accomplished a major milestone in a network modernization project by completing the upgrade of more than 2,400 sites across Qatar, enhancing the capabilities of Ooredoo's network.

As part of this network modernization, Ooredoo has deployed Ericsson Spectrum Sharing sites on its commercial network in Doha to facilitate an efficient, flexible and smooth evolution towards nationwide 5G coverage. A part of Ericsson's 5G Platform, Ericsson Spectrum Sharing enables Ooredoo to run 4G and 5G traffic simultaneously on the same frequency band and radio hardware. Equipped with the latest products and solutions from Ericsson, Ooredoo's 5G network promises to help accelerate the digitization of industries, opening new opportunities and enabling Ooredoo to launch the most advanced technologies while improving user experience with higher speeds and high-capacity services. ■



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