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The latest in telecoms, sat-comms & ICT sectors of the Middle East, Asia and Africa

Satellite signal interference can be blocked to improve security

Skot Butler
President, Intelsat General

STC moving towards achieving objectives of 2030 Vision

Khaled Biyari

Hughes signs $190M contract with OneWeb

Yahsat's Al Yah 3 to launch in Jan'18

Connecting Africa

Kamal Mokrani, VP Global Infinet Wireless

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Editor's Note

Dear Reader,

Welcome to the latest edition of Teletimes International.

As the year ends, it is a good time to look back and see how we have performed throughout the year and plan ahead for the coming year. This issue features multiple interviews with senior executives talking about how 2017 has played for their respective businesses in order to understand what the industry went through in this periid. You will also find a lot of discussion on how things are looking for 2018 as we enter the new year.

Intelsat General recently proved satellite signal interference can be blocked to better secure critical real-time data collection and dissemination which is a huge leap forward for the satellite industry. Discussing the same and the importance of cyber-security in satellite communications is an interview with Skot Butler, President, Intelsat General featured in this edition.

In light of the recent AfricaCom 2017 held in Cape Town, we have featured an exclusive interview with Kamal Mokrani, VP of Infinet Wireless who talks about the African telecommunications market and Infinet Wireless' operations in the region.

You will also find in this edition some interesting articles about Enterprise and ICT operations management. I would recommend "How Service Providers Can Meet and Exceed Expectations within the Modern Broadband Marketplace" and "When data is outside your wall, it's at risk".

As always, you will find the latest news and updates from all major players in the industry within this edition. Your feedback is very welcome on info@teletimesinternational.com

Enjoy Reading!

Khalid Athar

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ARTICLE

When data is outside your wall, it's at risk

Ken Herron

Artificial Intelligence (AI) and the Internet of Things (IoT) individually have the potential to deliver tremendous value. Today, industry leaders are beginning to realize the importance of deploying these technologies in conjunction with each other, representing a potential trillion-dollar market opportunity.

For IoT to deliver on its promise, it needs AI to make sense of the data, determine appropriate options, and seamlessly provide that intelligence to the business.

For years now, we've been talking about the increasing velocity and unprecedented disruption of this marriage. In bringing these two ascendant technologies together, some companies have raced forward, while others have sat back and watched. Those waiting will become further behind as the benefits for using AI and IoT in conjunction with one another are increasing.

IoT has reached an inflection point where, as with any successful technology, the linear progression has achieved critical mass, and rapid growth is depicted as a "hockey stick" on the graph. While all technologies start on the margins, IoT seemed to have been stuck there for a while, slowly moving forward – testing various engineering configurations, analytical interactions, and ecosystem supporters.

How did we get here?

The internet was disruptive because it forever changed the way humans communicate with each other. AI and IoT are disruptive because they will forever change the way humans communicate with machines.

This is a fundamental shift.

Wait, haven't our machines always been able to communicate with us? Yes. Basically. Poorly. We were required to learn different languages for different machines.

Humans needed to do whatever individual machines required. We conformed to them. Each time Microsoft Office changed a menu, we relearned. How many of us reading this went to school for years to learn how to speak to machines in languages that are now obsolete! Unfair? Crazy? Yes.

Machines weren't adaptable. Machines couldn't learn. Humans are adaptable. Humans can learn. And so we did. But what would happen if we could have a smart, connected conversation?

Imagine this healthcare scenario, a fictitious, but sure to be manufactured, "MyHealth" health tracker.

AI and IoT made us the promise we wanted to hear. Systems would be better, would do better and deliver the ultimate health tracker that alerts individuals to potentially life-threatening health issues before they occur.

While this is still a fantasy right now, ALL of the underlying technologies – private cloud, public cloud, edge, etc. – exist to make it a reality.

Clearly, in this scenario, there are multiple, integrated hardware and software products working together to execute tasks. Often, delivering an experience like this required several partners. Data, analytics, tracking, updating to match the individual, integrated with other sources – including the weather, maps, and dietary programs. With IoT and AI working together, harnessing the sensors, software, and resulting data, this fantasy health tracker could come to life. Most importantly, because of the intelligence and convenience it delivers, it opens up new potential subscription revenue and data brokerage opportunities. Manufacturers and other service providers could pursue multiple new revenue streams.

We could have picked a building's systems, a firefighter's safety gear, a car's autopilot, or a robotic arm on a factory line.

Each one has a solid IoT evolutionary path. As you develop the user journey, assemble the data, the individual use cases in the experience and the technology stack to deliver, return, and analyze them, you recognize talking to machines is a combination of services and insight. You also realize that a lot of data is now spread across multiple sources and interaction types, and each time you make that jump, there's risk.

Whenever data is outside your wall, it's at risk. You have to ensure you do everything you can to keep it secure.

Once your device data goes "outside your control" and is handled by another entity for interaction, you might unwittingly be powering some other company's intelligence. Privacy is – and will only increase as a – critical consumer issue.

Increasingly, as what you do with your devices and data moves from:

1. Understanding the device to
2. Understanding the client to
3. Understanding the environment to
4. Understanding interactions and being able to make recommendations and take actions, you realize that putting your arms around as much of that data as you can is worth something. T

Satellite signal interference can be blocked to improve security

Skot Butler,
President, Intelsat General

Teletimes Interview

Teletimes: Can you comment on the importance of cyber security with respect to satellite communications in the current scenario where cyber attacks are increasing (in number and types of attacks) day by day?

Skot Butler: Cyber security is a priority and extremely important to Intelsat General and our customers. The growing volume and sophistication of cyber attacks require more advanced technologies and controls to ensure the resiliency of satellite networks. Intelsat's Globalized Network is an integrated ecosystem of next-generation technologies and services with cyber security designed as part of the system, as opposed to bolting it on as an afterthought. It includes our next-generation Intelsat EpicNG satellites and the IntelsatOne terrestrial network.

The satellites feature spot beam technology that substantially reduces the area on the ground from which an interferer can operate. Other interference-mitigation capabilities like on-board power monitoring and notch filtering of interferers/unauthorized users as well as monitoring, re-routing, geo-location, and identification of interferers provide additional protection.

We recently completed testing on the interference mitigation capabilities of the Intelsat EpicNG platform with excellent results.

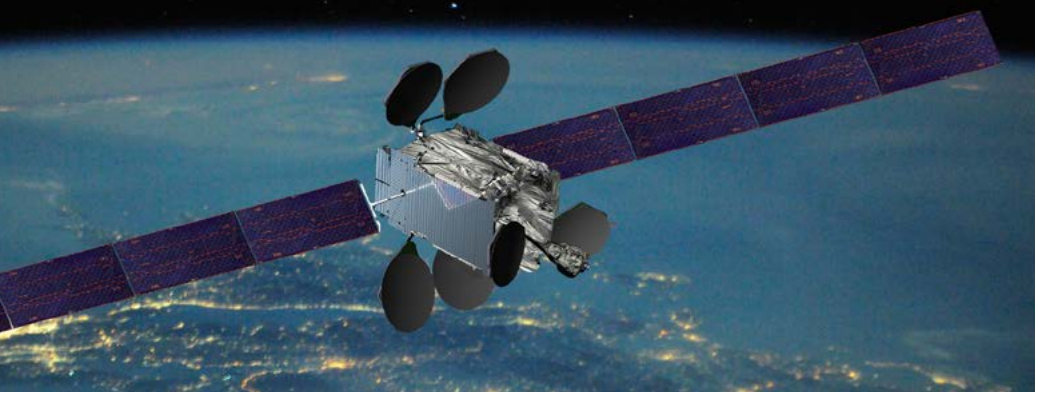
TT: What kind of satellite customers are most prone to cyber-attacks and who will be able to benefit most from your recent developments in interference mitigation?

SB: All our global government customers can benefit from the enhanced security measures inherent in the new Intelsat EpicNG system.

In general mobility, and more specifically aeronautical, applications will benefit from the greater security of the EpicNG satellites. We promised our customers we would deliver a capability optimized to mitigate interference and provide cost-effective, resilient communications to small, disadvantaged terminals. We have delivered and our customers are astounded at some of the performance results

TT: Can you elaborate on the interference scenarios and counter mitigation techniques enabled by the Intelsat EpicNG class of satellites?

SB: Satellite communication systems are critical for collecting and disseminating video and data that give governments real-time information about an operational environment. Our recent Interference



> **The U.S. government has been using the Intelsat satellite network and commercial satellites in general for the past decade to support their mobility requirements around the world"**

Resolution demonstration showcased the capability of the Intelsat EpicNG system, and its advanced digital payload, to work around efforts to interfere or jam the signals being transmitted via our satellites.

The Interference Resolution demonstration used a remote terminal transmitting video to a hub earth station over the Intelsat 29e satellite. During the validation process, technicians transmitted an interference signal on the same channel used to transmit the video.

Once the interference was detected technicians were able to reconfigure the satellite and the remote terminal thereby re-establishing video transmissions. The reconfigurations (1) terminated the interferer at the satellite thereby clearing the downlink, (2) provided a new, interference-free uplink channel, and (3) connected the new video uplink channel to the original, now clear, downlink channel.

TT: Can you give us a comparison between the security that Intelsat EpicNG satellites are able to provide and other satellites being used for government and critical use?

SB: Intelsat uses a defense-in-depth approach to security that takes into account several measures. The company meets DoD-mandated security requirements for information assurance by assessing its own infrastructure and third-party networks against the most stringent DoD Instruction 8500.01 and NIST Risk Management Framework (RMF) cyber security recommendations and controls.

A comprehensive Information Assurance assessment and remediation program includes annual penetration assessments, organization-wide control assessments, and third-party SOC3 audits of both satellite and terrestrial environments.

By retaining control of both the space and terrestrial components of the global Intelsat network, IGC can better detect, prevent, and mitigate cyber threats.

As an example of our commitment to a complete secure network, Intelsat also pays cybersecurity firms to assess the VSAT equipment its customers use to gain access to satellite links. There is an automatic, default expectation that security is built into VSAT platforms, but it's not. We make sure it is when customer equipment becomes part of our network.

The U.S. government has been using the Intelsat satellite network and commercial satellites in general for the past decade to support their mobility requirements around the world. As the sophistication of jammers increases so will the interference mitigation technology on our satellites. Because of the shorter timeframe for commercial development, the advanced technologies on commercial satellites are generally years ahead of those on government satellites. Government timelines just can't compete.

TT: Are you planning to introduce any further security protocols to Intelsat satellites in addition to what you already have? (In simple words, what are your plans for making your satellites even more secure?)

SB: Intelsat is already planning for future satellites that will be fully software-defined for ultimate flexibility and resiliency. Since 2012, Intelsat has been able to transmit encrypted commands to our satellites using NSA-approved equipment. With the launch of Intelsat 35e in 2017, Intelsat's satellites can now also employ NSA-approved encryption on telemetry transmitted from the satellite to earth. We will continue to work with our government customers to ensure that their security requirements are met and even exceeded on our future satellites. T

Biyari: STC moves confidently towards digitization and achieving objectives of 2030 Vision

STC Specialized launched its new identity in a celebration that took recently in Riyadh.

Dr. Khaled Biyari, STC Group CEO confirmed that STC Group moves confidently towards its strategic goals and digitization to comply with the ambitious vision of 2030. Pointing out that STC is a pivotal part in building a digital economy that will give the Kingdom a competitive advantage and will provide modern specialized services in health, transportation, education, security, defense and banking services.

In a speech, Biyari stated that, "demand for specialised communications is increasing in the Kingdom, and since the first day of acquiring Bravo in 2014, until the acquisition is 100% completed, and launching STC Specialized, the company has been put on a development track through strategic plans. We started to implement an ambitious strategic plan to move the company to a new phase of growth and synergy. Today, STC Specialized is an operational technical arm of Saudi Telecom Group STC".

Dr. Tariq Enaya, Enterprise SVP and chairman of STC Specialized, stated that launching the new identity of STC Specialized is an important step toward achieving the company's goals and future vision of building a unified national network for specialized communications, emergency and crisis management. Noting that specialized telecommunications networks play a great role in regulating the work of public services, whether in the transportation sector or the logistics services at airports and seaports, Oil and gas sector, or the public safety sector. In addition to the security role of integrating all the security sectors under a unified communications system, pointing out that the priority of the company is to contribute positively to digitization of the group. The national unified communications, emergency and crisis management Network of STC Specialized is an important tool in the digital transformation process.

Dr. Fahad bin Mushait, STC Specialized CEO, stated that rebranding STC Specialized is a new stage for the company to move towards greater horizons, gain customer confidence, speed up the development process and complete the planned projects in record time. He added that the company's entry into the Saudi telecom market 16 years ago has revolutionized the world of wireless communications in the Kingdom, benefiting from its services in many vital sectors. He added that joining STC has launched a new era of development and putting the first pillar of the national specialized telecommunication network, which various public and private sectors benefit from, in emergencies and risk /crises management. T

STC launches (1000 Volunteer) campaign in alignment with the Kingdom`s Vision 2030

Simultaneously with the International Volunteer Day, STC launched a 1000 Volunteer campaign, that aims to enhance the positive interaction between employees and their society in line with the Kingdom`s Vision 2030 that aims to reach a million volunteer.

Corporate Communication GM in STC, Abdullah Alfahad, stated: "The expertise, knowledge and skills of STC's employees in various fields enable them to innovate and add value in many areas of volunteering including charily". He added: "We are quite confident that "1000 volunteers" will be a new start for our employees to continue their positive role in the Kingdom's society and promote values of giving as well as to contribute effectively to achieving one of the objectives of the Kingdom`s Vision 2030 to reach a million volunteer".

The campaign comes within STC Social responsibility initiatives that aim to create partnership with the society and increase its chances of growth and development through sustainable development projects.

Dawri Plus wins the Award of Best Digital Strategy of 2017

Dawri Plus application from STC won the award of Best Digital Strategy of 2017. STC signed an exclusive agreement, with Saudi Arabian Football federation (SAFF), to broadcast all friendly matches of our national team, in preparations for world cup 2018, via "Dawri Plus" application.

This agreement comes in the frame of CTS`s support to the National Team in all occasions and meet the ambitions of Saudi Team Fans.

Dawri Plus by "Intigral", one of STC Group Companies, provides exclusive media content such as the direct and exclusive broadcast of Saudi football competitions, in addition to providing summaries of the league and other specialized services in the Social Media.

The award was handed to Faisal Abusaq, Head of corporate communication and sports. This is the second award for Dawri Plus after winning (Innovation in MENA Sport 2016). It is worth mentioning that the application has achieved large number of active subscribers locally and regionally, where the number of users exceeded the 3.3 million users, with the monthly view exceeded 50 million pages

Huawei unveils its commitment to "Quality Broadband"

At the 4th Ultra-Broadband Forum, Ryan Ding, Executive Director and President of the Carrier Business Group of Huawei, unveiled the company's commitment to providing "Quality Broadband".

According to Ding, experience is becoming a bottleneck that plagues broadband development and operators need to provide better experience to meet the needs of individuals, households, enterprises, and the future intelligent world. By increasing the efficiency of broadband investment and shortening its payback period, operators can achieve sustainable development. Huawei will work with global operators and partners across the broadband industry to build a new industry ecosystem based on quality broadband.

The global broadband industry used to benefit from its large user base, but now, the industry has moved into an era in which it can monetize experience and data. According to statistics from the International Telecommunication Union, global broadband penetration increased from 18% in 2006 to 52% by the end of 2016. Leading global operators are actively accelerating their deployment of high-speed broadband networks. So far, more than 350 operators have launched gigabit services, further consolidating their leadership positions in broadband services. As we enter an intelligent world, broadband will be more than network connections; it will become a cornerstone of the intelligent world.

The whole broadband industry is booming. However, the broadband industry still faces great development challenges. From an end user perspective, broadband experience urgently needs improvement as home broadband is increasingly enabled by Wi-Fi networks, and video and virtual reality (VR) services continue to develop. From an operator perspective, the payback period of broadband investment is long, especially in developing countries, and as the last mile remains challenging, network operation efficiency is low.

Against this backdrop, Huawei has unveiled its commitment to "Quality Broadband". The company aims to help operators

As we enter an intelligent world, broadband will be more than network connections; it will become a cornerstone of the intelligent world

improve connection, service, and customer experience, and achieve precise, value-driven investment and network deployment so as to seize new opportunities from broadband development. Huawei believes that quality broadband is possible only when experience-driven operations and value-driven network deployment are realized. These two initiatives can help operators build differentiated competitive strengths and achieve business success.

For experience-driven operations, Huawei believes the first goal must be to build a visualized, manageable, and operable home network, and improve the connection experience by improving Wi-Fi access quality at home. Experiences with broadband services such as video, VR, gaming, and private lines also need to be improved. The focus of operators should shift from building pipes to building platforms to establish their unique broadband service models. Huawei also suggests operators improve their end-to-end process when facing end users and improve user experience and satisfaction. Approaching this from multiple dimensions, such as business, network assurance, and services, will make broadband services more competitive.

For value-driven network deployment, Huawei thinks it is key for operators to focus on return on investment (ROI) and achieve precise investment, network deployment, and operations to shorten the payback period. Specifically, operators can adopt big data technologies to achieve precise investment and planning, targeting high-value regions and users. For the last mile, operators can use any medium such as optical fiber, copper, and wireless to increase broadband speeds while achieving the optimal total cost of ownership (TCO).

For the backhaul, operators can take several measures, such as fixed-mobile synergy, infrastructure sharing, and creation of industry alliances, to share benefits and fully collaborate with other industries. In addition, operators can introduce a lightweight operation support system, a home pass map, and other solutions for quicker broadband service provisioning, a higher rate of user broadband installation, and a shorter payback period.

With its extensive broadband deployment experience around the world, Huawei has built a multi-dimensional supporting system that includes business consulting, network planning, operation consulting, and unique products and solutions to help global operators build quality broadband. For example, Huawei has helped operators significantly improve video service experience and rapidly grow their video user base. In emerging countries, Huawei has helped operators achieve precise investment in FTTH and efficient network deployment, greatly shortening the payback period. T

Huawei announces three cooperative directions for TechCity 2018 to accelerate monetization of new technologies

At the Global Mobile Broadband Forum, Huawei released three cooperative directions of TechCity for 2018. Huawei is excited and honored to work together with global operators towards building a leadership position from the aspects of technology, business, and social responsibility.

Joint efforts into TechCity 2.0 will contribute to better connected cities and an enriched urban lifestyle.

In 2018, TechCity will focus on three cooperative directions to accelerate monetization.

Digital Industry Applications: Mobile Empowers Operators to Enter Diverse Industries

TechCity allows operators to quickly verify innovative solutions and monetize technological leadership. It also provides digital applications to let operators enter the new business blue ocean market and monetize business leadership.

TechCity gathers Huawei, operators, and governments to continue fostering NB-IoT applications that meet local demands while exploring broadband IoT cases to create digital smart cities. WTTx serves as the fourth connection mode following fiber, copper, and cable. WTTx will connect all the unconnected ranging from users to households and enterprises to enable digital broadband cities. Low-latency LTE features (such as Short TTI) help incubate assisted driving cases and improve the efficiency of urban transportation systems.

In addition, operator's 4.5G networks can replace the original narrowband trunking systems with an abundance of broadband trunking services to ensure public security.

These services include video group calls, video surveillance, drone inspection, and low-altitude coverage, which help convey an approach of "Seeing is believing" and ultimately improve work efficiency of public security personnel within a Safe City.

Giga Experience: Drive Basic Urban Communication Capability Upgrade

Giga experience will serve as a new experience standard, driving upgrades of basic urban communication capability. This secures a multitude of applications to meet diversified requirements of urban residents.

Huawei possesses cutting-edge innovative technologies, such as 4.5G multi-antenna, multi-carrier CA, Small Cell, and 5G. With TechCity, operators can continuously enhance network capabilities to meet growing experience requirements of urban consumers.

TechCity can also satisfy operators' business demands in different capacity scenarios and provide 5G-oriented Giga experience to monetize leadership in technology and business.

Industry Ecosystem for Digital Society: Create Better Connected Cities

A digital society is designed to incubate future-oriented applications. Global operators are highly advised to develop capabilities in terms of teams, ecosystem, business structure, governmental cooperation, and policy support.

These capabilities are key to digital transformation across diverse industries for a better connected world. Huawei is willing and eager to engage in further collaboration with customers and launch TechCity to build an industry ecosystem for a digital society.

Specific areas of focus include:

Governmental cooperation and policy support: Huawei and operators can encourage governments to open public resources, lift industry restrictions, and develop public service standards (such as a national broadband white paper).

Industry collaboration: Huawei and operators can promote the maturity of the industry chain (such as terminals and chips) and interoperability of industry applications (especially for local industries). This helps operators develop new digital applications (adaptable to their networks) and quickly enter a broad range of vertical industries.

Business incubation: Huawei and operators can establish networks for small-scale commercial deployment, while verifying and fostering new business models in advance. These actions help to anticipate the rapid commercial use of industry applications for the imminent arrival of a digital society.

Global operators are basic network providers, and are solemn and inescapable to laying a solid foundation for continuous emergence of new applications in a future-proof digital society. TechCity will allow operators to build a robust industry ecosystem for better connected cities.

Zhou Yuefeng, CMO - Huawei Wireless Network Product Line, indicated that, "Technological and business successes are both indispensable. Network innovation aims to deliver more and more business growth. With a clear-cut long-term strategy and direction, operators are advised to accelerate commercial deployment and the monetization of TechCity new technologies in small increments, but at an increasingly expedited pace."

In 2018, Huawei plans to cooperate with global operators and implement TechCity in over 16 cities, with a keen focus on enabling **Digital Industry, Giga Experience, and Digital Society.** In-depth cooperation in these three directions is set to enrich urban life and create a better connected world."

In 2017, global operators closely worked with Huawei to launch TechCity which has emerged as a bridge between a multitude of applications and commercial deployments.

The TechCity project will span across 16 global cities when Seoul Korea (LG U+) and St. Petersburg Russia (MegaFon) plan to launch the TechCity project in 2018. T

Etisalat Digital and SUSE sign Cloud Service Provider partnership for UAE

Etisalat Digital, a business unit of Etisalat, and enterprise open source infrastructure solution provider, SUSE, have announced a new strategic Cloud Service Provider partnership for UAE. The partnership will enable Etisalat Digital to expand their cloud and data center product and solution offering across a range of platforms including VMware Cloud, Microsoft Azure and SAP solutions certified platforms.

As part of the partnership, Etisalat Digital will provide managed services for Linux and open source customers and will offer a range of SUSE's software-defined infrastructure solutions such as SUSE Linux Enterprise Server, SUSE Linux Enterprise Server for SAP solutions for business critical big data analytics with SAP HANA and S/4HANA. These solutions can be deployed on public, private or hybrid cloud environments, and are designed to fulfil the most critical customer requirements.

"The partnership with SUSE adds critical capabilities to our offering and empowers us to provide innovative, more robust and certified software-defined infrastructure solutions within our cloud and data center solution", said Miguel Angel Villalonga, VP of Cloud and Datacenter at Etisalat Digital. "By leveraging the SUSE portfolio, we can broaden our offerings for hosting and managing mission critical workloads for enterprise and government customers, creating an agile, always on business environment, and helping customers to achieve a zero-downtime environment and lower cost."

"We have seen a strong appetite for cloud solutions in the UAE and worldwide, as big data and real-time analytics are driving IT transformation in the modern enterprise. The recent Cloud Report 2017 commissioned by SUSE shows that organizations are taking advantage of software-defined infrastructure (SDI), containers and DevOps to keep pace with the demands of today's markets", said Paul Abi-Chahine, Regional Director, EMEA East at SUSE. "The partnership with Etisalat Digital combines SUSE's innovative enterprise solutions with the expertise of a world leading Cloud Service Provider, driving digital transformation by enabling enterprises and governments to become smarter through the use of the latest technologies."

(L) Paul Abi-Chahine, Regional Director, EMEA East, SUSE and (R) Miguel Angel Villalonga, VP of Cloud and Datacenter at Etisalat Digital

Customers deploying SUSE Linux Enterprise in the Etisalat Digital public cloud will have the ability to:

• **Increase agility while lowering cost:** customers can convert upfront capital expenses to pay-as-you-go operational expenses. Whether migrating existing workloads or developing and deploying new applications, SUSE solutions ease the transition to the public cloud.

• **Adopt a zero-downtime model:** The loss of a mission-critical application or service due to downtime is expensive whether applications are running in the cloud or an on-premise data center. Business continuity and disaster recovery solutions with SUSE Linux Enterprise in the Etisalat Digital cloud ensures that businesses stay up-to-date with the latest security patches, feature enhancements and bug fixes with a 24/7 support team. On-demand compute resources enable customers to extend their on-premises HPC cluster into the cloud when more capacity is needed. The easy to set up and use, SUSE Linux Enterprise High Availability Extension, eliminates anxiety over data loss with real-time synchronization that quickly restores clustered services and intelligent locking mechanisms that maintain data integrity, helping customers maintain continuity, protect data integrity and maximize uptime.

• **Manage the entire business in the cloud**: Running SAP solutions in Etisalat Digital cloud on SUSE Linux Enterprise for SAP Applications, the leading platform for SAP solutions including SAP HANA, provides a reliable, manageable and highly available platform for all SAP mission-critical workloads. Jointly validated and certified by SAP and SUSE, SUSE Linux Enterprise Server for SAP Applications, consistently delivers outstanding uptime and performance—even under full CPU loads and high memory stress. Integrated priority support and maintenance and extended service pack support, lowers the costs of operation and maintenance, and built-in business continuity eliminates single points of failure to protect business operations. T

Khalifa Al Shamsi: Telcos play a major role in AI revolution and creating a digital life platform

Telecom operators play a major role in the Artificial Intelligence (AI) revolution by providing the needed connectivity and infrastructure, including access between the different entities in the digital ecosystem to create a digital life platform, highlighted Khalifa Al Shamsi, Chief Strategy & Governance Officer, Etisalat Group.

Al Shamsi was part of a panel discussion focusing on 'AI, Cybersecurity and digitisation enablers: Challenges & Expectations' at the fourth edition of the 'Knowledge Summit' organised by Mohammed bin Rashid Al Maktoum Knowledge Foundation (MBRF).

The theme this year is 'Knowledge and the Fourth Industrial Revolution' taking place from 21-22 November in Dubai and will study the impact of the fourth industrial revolution on different sectors as it continues to focus on all aspects of life for individuals, institutions and nations.

The panel discussion gathered senior

executives from the industry and focused on the role of telecom operators in protecting digital security, hacking concerns as a hurdle towards broader IoT adoption, enablers for the AI revolution when it comes to capability and infrastructure, the movement towards a safe digital community, role of telcos in the AI revolution.

Khalifa Al Shamsi, Chief Strategy & Governance Officer, Etisalat Group pointed out, he said: "Telcos today a play a major role in the AI revolution as it plays a critical role in enhancing customer experience, efficiency, reducing costs, increasing compliance and most of all eliminating human errors. Etisalat today can provide the needed connectivity and infrastructure including access to massive data points and the linkage between different entities in the digital ecosystem to facilitate the digital life platform.

"Our corporate strategy is focusing on driving the digital future which requires technologies like AI to bring in technology advancement and level of maturity in our services and solutions. It is essential we make the relevant collaborations and partnerships amongst industry technology leaders, governments, infrastructure providers and operators in steering AI initiatives towards greater benefit and to accelerate their adoption. Policy making, regulation and governing framework will work in line to make this accessible to all end-users." T

Etisalat UAE conducts first VoLTE call over Cat-M1 IoT network in the region

Etisalat UAE announced its first VoLTE call over Cat-M1 IoT network in the region setting the future roadmap to deploy advanced networks to meet demands for diversified mobile broadband and communication services for IoT.

Etisalat maintains a strong leadership position in IoT technology and solutions with a history of firsts, including the first deployment of a nationwide LTE Cat-M1 network in July this year. This deployment was a revolutionary change and set a benchmark in the IoT ecosystem.

A game-changer for the industry, Cat M1 (Category M1) is a new class of LTE chipset that is designed for sensors. They require less power, offer extended battery life, wide coverage, flexible deployment, low latency and support an array of use cases ranging from water meters to asset trackers to consumer electronics.

The demonstration was conducted in partnership with Qualcomm Technologies using Etisalat's IoT and VoLTE capable network infrastructure, IoT devices with Qualcomm MDM9206 global multimode LTE IoT modems.

This technology will enable applications across different industries and areas, such as smart homes, industrial monitoring, asset tracking, healthcare, retail, smart cities, wearables, and much more. Cat M1 is important because it extends LTE's market reach.

By allowing LTE to cost effectively support lower data-rate applications, Cat M1 is being touted as a good fit for low-power sensing and monitoring devices such as health and fitness wearables, utility meters, and vending machines, among many others. T

teletimes INTERNATIONAL

We aspire to enter every industry and every area

2018 is going to be the Al Yah 3 year for us

Najat Khalid Abdulrahman
Executive Director, Global Business Development - Yahsat
speaks to Teletimes in GITEX 2017

Interview - Khalid Athar

Najat Khalid Abdulrahman is the Executive Director – Global Strategic Business Development for Yahsat.

Najat joined Yahsat, in 2013, with over 23 years' experience within the Telecom industry, she has been involved in Product Marketing, Marketing Communication, Channel development and Business Development within the UAE and the international domain.

Najat currently leads the Strategic business development team, systematically mapping and networking an ecosystem to drive enterprise transformational opportunities.

A key focus will be the building of long-term relationships and driving deals with strategic partners including Government, Humanitarian and global/Multinational Enterprises. With particular focus on vertical solutions.

Najat holds a B.A in Business Administration & Economics from International American University of Richmond UK, in addition to a Postgraduate Degree in International Marketing from University of Strathclyde, UK.

Khalid Athar: Can you tell us about the vision behind the solutions you have showcased at GITEX?

Najat Khalid Abdulrahman: Over the past years, we at Yahsat have felt that we need to go beyond our traditional services, that we need to go the extra mile. Rather than providing only the connectivity as we have been doing for the past many years, we want to offer productive and useful solutions as well. One of the things we are focusing on this year are our healthcare solutions.

In line with the UN SDGs (Sustainable Development Goals) we started working on healthcare solutions for far flung, rural areas which did not have proper healthcare. We worked closely with the Ministry of Foreign Affairs for the same with the aim of engaging with the community beyond the area of communication in truly helping people and bridging the digital divide.

We are also working on Educational solutions for which we are working actively in Africa, especially Kenya and also other markets like Pakistan. We are aiming and aspiring to offer a lot more than just connectivity and trying to add value to communities by providing real solutions.

KA: How has the year 2017 been so far for Yahsat?

NA: I think it's been a fantastic year so far. We are gearing up and preparing for our third satellite, Al Yah 3, and simultaneously working to partner with credible suppliers and solution providers. We have also been pursuing the humanitarian side of things, working closely with a good number of United Nations agencies to try to assess and understand the role we can play in disaster communications. We cover a wide area within and the MENA region and are looking at ways to provide connectivity to the governments, to the populations and most importantly, to the organizations that go out there and work to help affected populations.

We have received very positive feedback on all our solutions and efforts to explore new areas for Yahsat to be operating in, so overall I would look at 2017 as an excellent year for us.

KA: Which industry verticals are you focusing on with Yahsat and will be your strategy for Al Yah 3? Which areas will the new satellite cover?

> **Al Yah 3 will cover about 95% of the resident population in Brazil and about 60% from Africa adding a total of 22 more countries to the coverage"**

NA: We aspire to enter every industry and every area. We are currently supporting various verticals including oil & gas, security & surveillance, banking and many other verticals. What we want to do now is to take our success stories from one area and replicate them in other areas.

Answering your question about the coverage, Al Yah 3 will cover about 95% of the resident population in Brazil and about 60% from Africa adding a total of 22 more countries to the coverage.

KA: How do you think are HTS satellites transforming the market?

NA: There is certainly a big transformation coming because of these satellites. HTS has brought changes in the form of cost-savings, higher economies of scale, ease-of-transportation and installation, almost every aspect of the product which is changing the way people look at satellites. It is resulting in higher adoption of the satellites and has proven to bring about a very positive change in the industry.

KA: Can you tell us a little bit specifically about Yahsat's business strategy?

NA: When Yahsat started, we changed the go-to-market from the traditional satellite providers' approach which would be to only sell the connection and not get involved any further than that but when we came to Africa, we decided to play a bigger role. We contacted local service partners and started working with them due to which today, we not only provide the connectivity but also provide first-tier level support with on-ground teams that are working with our customers in the region. I think the way to move forward is to focus on providing solutions rather than connections.

KA: Yahsat is quite involved in the development of local talent and space related projects. Would you like to share any highlights with respect to that?

NA: We have worked together this year with GITEX on the Student Lab which is an innovation competition for the Information and Communications Technology (ICT) industry. The Student Lab competition was designed to give an opportunity to students from UAE, and across the world, to present their innovative ICT solutions to an expert panel. The purpose of the Student Lab is to recognise and promote innovation and creativity among students in the fields of communications technology, engineering, science and computing. We selected three winners during GITEX and Yahsat will provide the first winner with an all expenses paid trip to Kourou in French Guiana, to attend the launch of Al Yah 3.

> **We support local talent and youth through transfer of knowledge, dedicated programs, competitions and other initiatives"**

In addition to that, last year, Yahsat and Masdar institute have worked on a space program degree where students could do their Masters concentration in Space Technology. We have also had some very talented young Emiratis working on the Al Yah 3 project in the United States.

We plan to continue to go down this path where we support local talent and youth through transfer of knowledge, dedicated programs, competitions and other initiatives.

KA: Moving in to 2018, what will be your biggest priorities?

NA: 2018 is going to be the Al Yah 3 year for us. We are extremely excited and geared up for the launch and ready to make it a success. T

Yahsat partners with BLUETOWN to connect the unconnected across YahClick's footprint

Yahsat with the Danish technology and Internet Service Provider company BLUETOWN at AfricaCom 2017. The partnership agreement aims to connect the unconnected by providing high performance Ka-band satellite Internet services combined with BLUETOWN's unique last mile solutions in unserved or underserved locations.

Both companies will join forces to offer an innovative, reliable and sustainable solution that will overcome the challenging and harsh terrain conditions present in the most remote areas of Africa.

The combination of the partners' technologies will support the distribution of Yahsat Internet satellite services to a substantial number of users within communities utilizing BLUETOWN's last mile solution. BLUETOWN solutions vary from single village installations and refugee camps to solutions with up to 200 Wi-Fi hotspots in a 15 km radius. All solutions are 100% powered by solar energy with rechargeable batteries as a back-up, which provides 24/7 access to the Internet. The Wi-Fi hotspots will be backhauled by YahClick, the high-performance satellite broadband service provided by Yahsat, making it possible for people to browse the Internet, keep in touch, or participate in e-learning, e-health and e-government programs using any smartphone, tablet, or laptop.

Commenting on the partnership, Farhad Khan, Yahsat's Chief Commercial Officer said: "We look forward to working hand-in-hand with BLUETOWN to bring universal access to information through a combination of satellite connectivity and Wi-Fi services. By joining forces, we will be able to offer a sustainable Internet solution for unserved or underserved communities, which is cost effective, easy to use and reliable."

In addition to its core solution, BLUETOWN has developed a Local Cloud intranet platform to provide fast and easy access to e-learning, e-health and e-government services among others.

According to Henrik Mølgaard, VP of Global Sales at BLUETOWN: "We and Yahsat share the same vision to spread connectivity to even more communities, where information is not easily accessible. Today, governments are showing great interest in developing rural areas because it benefits everyone, and can help deliver better healthcare and education to small, remote villages. We are delighted to partner with Yahsat, combining their expertise and experience with our innovative solutions, to connect even more rural areas in Africa together."

The announcement falls in line with the upcoming launch of Yahsat's third satellite, Al Yah 3. "With the launch of Al Yah 3, we will be able to triple our presence in the African market, providing connectivity to 20 additional countries. Strategic partnerships such as the one with BLUETWON are essential to strengthen the economic inclusion of Africa's rural communities. We are now one step closer to achieving our ultimate objective of empowering communities everywhere," concluded Farhad Khan. T

Yahsat's Al Yah 3 satellite to be launched in Jan'18

Yahsat and Orbital ATK have announced that the Al Yah 3 satellite has successfully arrived at its launch site in Kourou, French Guiana. The satellite, third in Yahsat's fleet, is scheduled to be launched on an Arianespace rocket on 25 January 2018.

Al Yah 3 is a Ka-band high-throughput satellite that will expand Yahsat's coverage to an additional 19 markets in Africa and marks Yahsat's entry into Brazil. The satellite's footprint will cover 60% of Africa's population and more than 95% of Brazil's population.

"Al Yah 3 is a significant milestone in realising our vision at Yahsat. Extending our affordable broadband services to 60% of the African population and more than 95% in Brazil to bridge the digital divide and enable a more connected world is core to our strategy. We look forward to the successful launch of Al Yah 3 and thereafter furthering our ambitions via future missions to support more growth for YahClick, and for our other business lines such as commercial in-flight connectivity," said Marcus Vilaca, Chief Technology Officer at Yahsat.

"The satellite's successful delivery highlights the teamwork and co-operation between Orbital ATK and Yahsat that brings us one step closer to advancing our customer's goals," said Amer Khouri, Vice President of the Commercial Satellite Business at Orbital ATK. "With the satellite now in Kourou, we look forward to working with both Yahsat and Arianespace to prepare for a successful launch on 25 January."

The manufacture of Al Yah 3, which is the first hybrid electric propulsion GEOStar-3™ satellite to be completed by Orbital ATK, involved a project management team comprising Emirati engineers who have been based at Orbital ATK's satellite manufacturing facility in Virginia, US.

Leveraging the build of Al Yah 3 to develop national talent, Yahsat had enrolled 14 UAE Nationals in engineering apprenticeship programmes, which ran over a six-month period at Orbital ATK's manufacturing facility. The programmes covered technical disciplines such as satellite payloads, ground networks systems and flight dynamics. T

Newtec appoints Steve Mills as Global VP Sales

Newtec announced it has appointed Steve Mills to the position of Global VP Sales, as it continues to record year-on-year growth of 10 to 20%.

The addition of Mills to the Newtec management team demonstrates the company's continued expansion, with its latest results showing increased revenue across its core markets of broadcast, consumer and enterprise VSAT and GovDef, fueled by High Throughput Satellite (HTS) deployments. Newtec specifically saw increased market penetration in mobile backhaul and mobility, including Inflight Connectivity (IFC) and maritime communications.

Prior to joining Newtec, Mills was Head of Global Sales and Marketing, Secure Communications, at Airbus Defence

and Space where he gained extensive experience in the government and defense market, among others. This role followed four years at Inmarsat as the Senior Director in Global Government.

Mills, who will be based in Europe, will oversee the sales and sales support teams in his new role and will be responsible for growing both direct and in-direct business, along with a strong Newtec value proposition in all markets worldwide.

"The current satellite industry is an incredibly exciting place to be right now," said Mills. "The rapid advancements being 'launched' by global satellite network operators are, more than ever, creating a growing need for advanced and innovative solutions and services which allow integrators, service providers and end-customers to exploit this new era in space. Newtec is paving the way in delivering technological and business differentiators that will provide enormous value. I'm thrilled to be joining the team and excited to see how far we, as industry leaders, can steer satellite communications over the coming years." T

Telestream to showcase streaming ecosystems at CABSAT

Telestream will use CABSAT 2018 to showcase end-to-end streaming and monitoring solutions, including strategic advances in video preparation and packaging.

In its first CABSAT since acquiring IneoQuest, the global leader in video quality monitoring and analytics solutions for content distribution across managed and unmanaged networks, Telestream will demonstrate how the IneoQuest iQ product line extends high-quality Telestream media production and distribution from the point of content ingest right up to the point of consumption on traditional and mobile devices.

New tools for live streaming and VOD best practices will be a key focus as strategies for OTT delivery and monetization become essential considerations for anyone creating or delivering content. This year, Telestream will spotlight new developments in high-end enterprise-scale streaming solutions. These include enhancements to its Lightspeed Live Stream and Lightspeed Live Capture and the iQ End-to-End monitoring solutions which, altogether, enable Telestream customers to stream any content to any audience, at any level of resolution, with assurance that it is meeting the highest quality standards.

Live capture and production over standard IP

A new integration utilizing Telestream Vantage Media Processing Platform and Lightspeed Live Capture along with IBM Aspera FASPStream enables high-quality streaming to remote production teams for near real-time editing and production over standard IP networks. The integrated solution allows creative teams to begin working on a live capture feed delivered from a remote location (across the country or around the world) while the event is taking place, without waiting for the entire file to be first written to disk and then transferred. Transcoding, packaging, editing and other downstream workflows can start immediately, significantly shortening the production cycle and increasing the value of the produced content. Vantage now has direct integration with Avid Interplay, and


Scott Murray

enhanced support for growing files for MXF OP1A, Quicktime, and TIFO.

End-to-end conditioning, packaging, and monitoring

As audiences move to more viewing platforms, content owners and distributors must optimize programming to each distinct viewing window, preserving rights agreements that may be in place, and ensuring a quality viewing experience. The latest enhancements to Telestream's Lightspeed Live Stream make content readily available for OTT consumption and revenue-optimized simultaneously with linear broadcasts, resulting in increased revenue and greater audience engagement.

Lightspeed Live Stream enabled content responds to embedded content replacement triggers (SCTE-104/35 messages) in the source video, enabling ad and content insertion at the server side. Lightspeed Live Stream can also condition the stream with SCTE 35 cue points, so that content and ads can be inserted further downstream to an audience more specifically with targeted ads and other relevant content. The net result is increased revenue and greater audience engagement for live linear content streaming to new media and online video platforms (OVPs).

iQ solutions address the need of content distributors to understand their network's performance, and quickly detect, identify, and resolve problems that could impact a significant number of viewers. Active monitoring at various points of the delivery network allows for rapid fault detection and troubleshooting. iQ ABR monitoring ensures that the content origin is operating properly and that delivery networks, including third-party CDNs and access networks, are performing to expectations.

"Video streaming – both live and on-demand – is an increasingly important component of broadcast operations worldwide. The MENA region plays host to many progressive broadcasters and media service providers, so CABSAT provides us with a fantastic opportunity to engage with this important audience," commented Scott Murray, VP of Marketing at Telestream.

"The product line offers a compelling digital media toolkit, one that helps our customers manage their video from creation through to delivery, streamlining operations and ensuring the highest quality. We look forward to a very busy and productive showing at CABSAT, he added." T

We fast tracked our plans to roll out new products and services

CEO, Ali Ahmed Al-Kuwari speaks about initiatives and achievement of Es'hailsat

Teletimes Interview

Teletimes: Since the year 2017 is ending now, would you like to share an year-end review Es'hailsat's initiatives and achievements.

Ali Ahmed Al-Kuwari: Demand for capacity from our existing and new customers exceeded expectations in 2017. These demands were met with available capacity on Es'hail-1 where possible and by acquiring additional capacity from partner operators to support specific customer requirements. We also fast tracked our plans to roll out new products and services, especially voice and data services by entering in to partnership agreements.

Over the course of the year we leased additional transponders to launch ultra high definition and new high definition sports and entertainment channels with beIN Media Group and added new Arabic channels on our MCPC bouquet. Al Rayyan, Qatar TV and Al Kass signed multiyear multi transponder lease to consolidate all of their channels on to our satellites. In addition we showcased for the first time in MENA live transmission of 4K UHD sports channel during CABSAT 2017 using latest compression and modulation technologies.

As part of our expansion plan, Es'hailSat signed MoU and terms sheets with partners, customers and VARs for new services. One such deal is the agreement we signed with Inmarsat to consolidate and provide

Inmarsat voice, data and broadband services for Qatar through Es'hailSat. Furthermore, Es'hailSat successfully carried out voice and data backhaul for major events in Qatar using Es'hail-1 Ka-band through our teleport and hub.

We had set ourselves specific targets to achieve in 2017 and we are on track to achieve those by end of the year with revenue targets on track, satellite capacity utilization above industry average and with a healthy revenue backlog.

TT: How has the company evolved over the past years and what are the main challenges it has been facing today?

AK: We started with a clear focus to support key stakeholders and partners within Qatar, such as beIN, Al Jazeera and government agencies. We have been working very closely with these entities to address all their current and future capacity requirements. We have addressed these requirements with capacity on Es'hail-1 and some others acquired from partners for specific requirements.

From pure capacity leasing we embarked on to providing support services, from teleport services, to content transfer via satellite and terrestrial networks for broadcast customers. We have also started voice and data services, mobile backhaul, VSAT services on Ka-band and L-band.

The main challenge at this point in time is availability of capacity to support customer requirements. With Es'hail-2 scheduled for launch in 2018 and our teleport expected to be fully operational soon, we are gearing up to address these capacity and services requirements.

TT: Es'hailsat has agreements with QCAA for joint development of satellite services and with ooredoo to enhance satellite communication for Qatar. Would you please elaborate the salient features of those agreements.

AK: We signed a memorandum of understanding with QCAA to jointly develop earth observation satellite for the Meteorological department under QCAA. This is still in the early stages with analysis and studies still under way.

With Ooredoo we have multiple agreements in place, from capacity lease to VSAT services to mobile backhaul to voice/ data services. Consolidating all of the requirements and with scale, we are able to provide Ooredoo and its customers optimum solutions cost effectively.

TT: What main services Es'hailsat is providing at the moment and in which countries?

AK: DTH is the main service on our Ku band capacity. beIN being our anchor customer for this service. In addition, Al Jazeera, Al Rayyan, Qatar TV and others take up a number of Ku-band transponders for DTH services. We also provide playout services, compression, modulation, and uplink services along with capacity lease. As required, we provide content transfer via online or fiber between playout facility and uplink station for final distribution via satellite.

> **"Our goal is to contribute to the development of a knowledge-based economy and a communications-based society"**

Telecommunications services such as mobile backhaul, Tetra, VSAT, voice and data services have been rolled out over the past year. Some of these services have been supported on Ka-band and others on L-band through our partnership with Inmarsat.

Our region of coverage is MENA, with services being offered in GCC, North Africa and Levant.

TT: What plans has Es'hailsat to enhance its services in the coming year of 2018?

AK: We see demand for mobility services increasing over the next few years. Plans are underway to roll out such services in maritime and land based sectors in the near future. Aero is another area we see demand increasing, in which we hope to be active in the long term.

TT: Es'hailsat provides direct-to-home television with its satellite, what plans the company has to provide further TV-related services in near future?

AK: Broadcasters are looking to reach as many customers as possible across a wider region and across all platforms. From Es'hailSat's perspective, we have some of the region's best channels on our satellite that we distribute across MENA. We will continue to support these channels as required through our teleport and satellite, with studios facilities, back-up facilities, disaster recovery facilities, datacenters, multiplatform operations, etc.

TT: How is Es'hailsat contributing to the Qatar Vision 2030?

AK: Our goal is to contribute to the development of a knowledge-based economy and a communications-based society in Qatar. In addition to building communications infrastructure, we are investing in and developing local talent through training programs with satellite manufacturers and scholarships for students to study satellite communications programs.

In 2013, we initiated a capacity-building and development program, where 4 engineers from Es'hailSat completed a 26-month intensive training program in USA to develop knowledgeable and sophisticated engineering staff to specify, oversee the manufacture, launch and operations of commercial communication satellites. We have continued this program for Es'hail-2 with engineers being attached with MELCO in Japan.

In addition, we have sponsored a number of Qatari school leavers who are enrolled in degrees programs specializing in satellite communications at universities in the UK. These steps are part of our program to develop core expertise in satellite technology and develop our future leaders.

We strongly believe that having relevant knowledge and operational expertise play a vital role in ensuring greater self-reliance and sustainability of the space industry in Qatar and therefore our efforts are directed towards establishing and aiding means to gain knowledge and rich operational experience. T

ESET unites with Microsoft and law enforcement agencies to disrupt Gamarue botnets

ESET in collaboration with Microsoft and law enforcement agencies – the Federal Bureau of Investigation (FBI), Interpol, Europol, and other stakeholders in cybersecurity – have taken down a major botnet operation known as Gamarue (detected by ESET as Win32/TrojanDownloader.Wauchos), which has been infecting victims since 2011.

A coordinated take-down started on November 29th, 2017 and as a result of this joint effort, law enforcement agencies across the globe were able to make an arrest and obstruct activity of the malware family responsible for infecting more than 1.1 million systems per day.

ESET and Microsoft researchers shared technical analysis, statistical information, and known command control (C&C) servers' domains to help disrupt the malicious activity of the group. ESET also shared its historical knowledge of Gamarue, gained from the continual monitoring of the malware and its impact on users over the past few years.

What is Gamarue?

Created by cybercriminals in September 2011, and sold as a crime-kit on the Dark Web in underground forums, the purpose of the Gamarue family was to steal credentials and to download and install additional malware onto users' systems.

This malware family is a customizable bot, which allows the owner to create and use custom plugins. One such plugin allows the cybercriminal to steal content entered by users in web forms while another enables criminals to connect back and control compromised systems.

Its popularity has resulted in a number of independent Gamarue botnets in the wild. In fact, ESET found that its samples have been distributed across the globe through social media, instant messaging, removable media, spam, and exploit kits.

How did ESET and Microsoft researchers gather intelligence?

Using ESET Threat Intelligence service, ESET researchers were able to build a bot that could communicate with the threat's C&C server. Consequently, ESET and Microsoft were able to closely track Gamarue's botnets for the past year and a half, identifying their C&C servers for takedown and monitoring what was installed on victims' systems. The two companies have since compiled a list of all of the domains used by the cybercriminals as C&C servers.

"In the past, Wauchos has been the most detected malware family amongst ESET users, so when we were approached by Microsoft to take part in a joint disruption effort against it, to better protect our users and the general public at large, it was a no-brainer to agree," said Jean-Ian Boutin, Senior Malware Research at ESET. "This particular threat has been around for several years now and it is constantly reinventing itself – which can make it hard to monitor. But by using ESET Threat Intelligence and by working collaboratively with Microsoft researchers, we have been able to keep track of changes in the malware's behavior and consequently provide actionable data which has proven invaluable in these takedown efforts."

What should users do if they suspect their systems have been compromised?

Cybercriminals have traditionally used Gamarue to target home users to steal credentials from websites through its form grabber plugin. However, ESET researchers have recently seen the malware being used to install various spam bots onto compromised machines in a so-called pay-per-install scheme.

ESET is advising users that fear their Windows system might be compromised to download and use the ESET Online Scanner, which will remove any threats, including Gamarue, found on the system. To learn about a more complex way to protect your devices from botnets, please visit ESET's dedicated site.

Nokia transforms experience for MTN Group's 52 million Nigerian customers

Nokia has been selected to help MTN Nigeria drive its transformation from network- to customer-centric operations and improve the experience for its 52 million customers.

Nokia's Customer Experience Management (CEM) solutions deliver automation and intelligence to help service providers operate more efficiently and seize new business opportunities, while ensuring subscribers receive the maximum benefit from their services.

MTN Nigeria is the first service provider in the region to deploy Nokia Cognitive Analytics for Customer Insight (formerly CEM on Demand) with Nokia Service Quality Manager (SQM) software.

Powered by machine learning algorithms, Nokia Cognitive Analytics for Customer Insight software provides a complete view of customer satisfaction, revenue, and device and network performance. When combined with Nokia SQM, which provides a holistic picture of service behavior and

Hassan ElChami

performance, MTN Nigeria will be able to speed the identification of service issues, like poor voice call and data session quality, and prioritize improvements based on customer and business impact.

The service provider will also leverage the global expertise of Nokia Analytics Office Services to facilitate its transformation to a customer-centric business. It will enable MTN Nigeria to maximize the benefits of Nokia software, accelerate the transformation process and adopt new advanced capabilities, such as data science and automation.

By deploying the Nokia solution with several use cases including VIP monitoring, roaming insights, churn diagnostics, Net Promoter Score (NPS) improvement, and others, MTN Nigeria aims to deliver a higher level of service quality and improved customer satisfaction, while increasing its NPS and reducing churn.

Hassan ElChami, Chief Technology Officer at MTN Nigeria, said: "Nokia's CEM solution and its underlying methodology exceeded our expectations, and its extensive use case library demonstrated the company's proven track record in helping service providers around the world successfully transition to customer-centric operations. We are confident that the partnership with Nokia will be invaluable in our ongoing effort to find new and more innovative ways to deliver superior experiences for our customers." T

AYRUS - Global brand in advanced surveillance and security

Ashraf Shaukat, CEO - AYRUS

AYRUS, a global brand in advanced surveillance and security solutions from USA, 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 and solutions to our valued clienteles.

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.

AYRUS range of product portfolio in Security solutions:

- Intelligent & Advanced CCTV Video surveillance solutions
- Mobile Surveillance solution
- Time Attendance & Access Control Solution
- Full range of Video Conferencing Hardware
- Smart Home Automation
- Fleet Management Solution

With remarkable presence in 43 Countries along with 900+ strong Partner Network We continue to enjoy rapid and steady growth and would like to invite you to be a witness of our global success As we are expanding our market share & operation we would like to approach global for possible cooperation with you. T

Know more @ www.ayrusglobal.com

AfricaCom 2017
Driving digital democracy in Africa

Dean Sackett

The 20th anniversary of Africa's largest tech-focused event may have come and gone, but beyond the record-breaking number of visitors, exhibitors and speakers and new launches and cutting-edge products this year, the outcomes make for a lasting impression.

AfricaCom was once focused solely on the telecommunications market, but now that conversation has successfully shifted to embrace all things technology driven – the backbone of our everyday and increasingly, future lives. While many of the discussions at AfricaCom 2017 centred around connectivity – from the cost of data to the deployment of satellite as a viable means of connecting the continent, Africa has more pressing problems – that of digital inclusion, and just what this means and how this


Stella Ndabeni-Abrahams, Deputy Minister Telecommunication, South Africa

digital-democracy can actually materialise.

Education was therefore a key buzzword at this year's conference as well as a major topic of conversation in the newly launched Technology Arena. "Connecting people is one thing but teaching them how to make the most of that connectivity and the tools to hand, is another thing entirely" shared Rekindle Learning's Rapelang Rabana.

Future Horizon Technologies' Raj Waniappa agreed, referring to the fact that Africans needed to contribute to their own digital ecosystem not just consume what was on offer, thus echoing a narrative that is beginning to resonate across the continent – African solutions for African problems.

Africans are extremely resourceful and innovative as it happens – with the AfricaCom 20/20 showcase and the Innovation Stage providing an excellent glimpse into some of the developments that the convergence of technology, media and telecommunications can provide. Cape-based carpooling app, uGoMyWay (referred to by panel moderator Deseré Orrill of Ole! Media Group as the 'Tinder for Mobility') for instance, was awarded the conference's first AfricaCom 20/20 Innovation award.

Organisers of the conference and exhibition – Knect365 – successfully managed to address both the B2B market and the B2C sector this year, separating the streams into clearly demarcated areas, easy to understand and follow. In the main exhibition hall, AfricaCom hosted the 'engine drivers' of innovation - the B2B components that make the apps and technology products a reality. Here visitors were able to engage with tower infrastructure providers, discuss connectivity issues and base station solutions – such as Parallel Wireless' unique solution that provides 2G, 3G, 4G and LTE

capabilities all in one housing that even communities can install and maintain alongside the telco operators (for which they were awarded a prize at the 10th staging of the AfricaCom Awards).

Eugina Jordan, Vice President of marketing at Parallel Wireless confirmed that the company would be back in 2018 with a bigger stand to allow for the interest shown in their novel products and services. Over in the new Technology Arena, the creators of content, apps and the technology for end users, proudly displayed their wares to an engaged cross section of visitors. Also housed in this new arena, the third staging of AHUB – where top entrepreneurs meet potential investors and where those considering a career in technology (which let's face it all of us in the future), gain valuable insights into prospective revenue generation opportunities.

All of this is driven by telecommunications and the telcos, handset manufacturers and supporting services were more than adequately represented – with Huawei's 10 Mate a major talking point for the design conscious. For those looking into AI and VR, AfricaCom presented some thought-provoking sessions with Dr Miriam Altman hosting a practical and interactive virtual reality classroom, showing just where education might go in the not too distant future.

Because this is in the main, a business show, AfricaCom would not be complete without a number of other business negotiations taking place throughout the three days. One such announcement was made by New Link (a division of the Bahrain-based Hagbani Group) and the Hongdian Corporation who are co-operating on a lucrative contract that will see a tailor-made technological control centre and call centre system developed for a high-end global concierge service. For the first-time visitor to AfricaCom, New Link are more than pleased with the co-operation agreement they have struck with their new partners, fast-tracking a global business opportunity.

Summing up AfricaCom 2017, Tom Cuthell, Portfolio Director of KNect365 said: "2017 was a major achievement for us as organisers – not only in celebrating two decades of staging this event, but in the sheer breadth of content on offer, covering everything from Blockchain and IoT to e-health and rural connectivity. It was a learning experience that united the entire digital ecosystem."

Dates for AfricaCom 2018 are 13 – 15 November and will once again be held at the CTICC, Cape Town. T

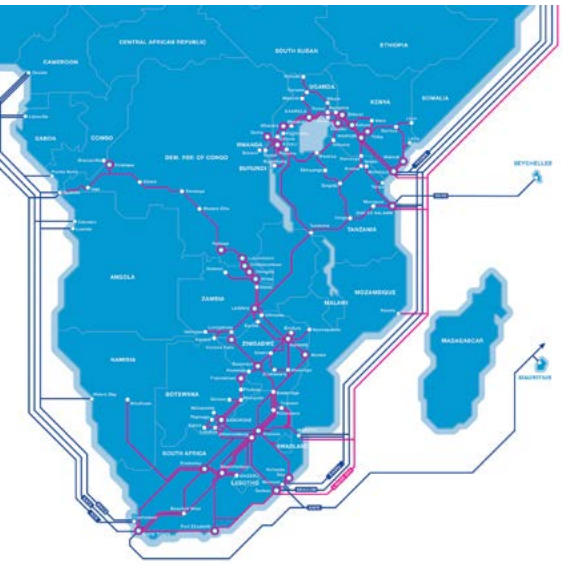
Liquid Telecom to become pan-African Microsoft Azure ExpressRoute partner

Liquid Telecom, a subsidiary of Econet Global, has become a Microsoft Azure ExpressRoute partner with pan-African network reach when the Microsoft Azure cloud platform is generally available in 2018.

Through its CloudConnect service, Liquid Telecom will be offering direct private connections to Microsoft's South African ExpressRoute locations allowing businesses of all sizes in Africa to have private access to Azure on their own continent.

CloudConnect for Azure ExpressRoute will enable customers to create private, predictable, high performance, SLA based connections between Azure data centres and infrastructure on their premises or in a colocation environment.

To support access to Azure services, Liquid Telecom is adding CloudConnect nodes to over 25 Points of Presence (PoPs)



across Africa, and is also making major upgrades to Liquid Telecom data centres in Johannesburg and Cape Town to meet the needs of global cloud players and enterprise customers.

Liquid Telecom is already taking pre-orders from some of the region's largest enterprises for CloudConnect, which leverages its extensive pan-African fibre network that connects more African countries on a single network than any other. This is part of Liquid Telecom's strategy to become an integrated fibre network, data centre, content and digital services provider.

Nic Rudnick, Group CEO - Liquid Telecom

"The arrival of the Microsoft Azure cloud platform in South Africa is a statement to the world on how far Africa's cloud ecosystem has come," said Nic Rudnick, Group CEO, Liquid Telecom. "We are delighted to be able to offer enterprise customers fast and reliable connections to the Azure platform through a local connection to their nearest Liquid Telecom CloudConnect node."

In August, Liquid Telecom joined Microsoft's Cloud Solution Provider programme and is now able to offer Azure as a managed service to enterprises and small businesses alike in the region.

"Liquid Telecom's extensive fibre footprint across Africa provides support for the upcoming launch of the Microsoft Azure cloud platform in South Africa. With scale and reach across Sub-Saharan Africa, Liquid Telecom will increase Azure ExpressRoute availability across the region and help deliver Azure to more enterprise customers," said Ross Ortega, Microsoft Azure, Networking Product Management, Microsoft Corp.

As an official Cloud Solution Provider, Liquid Telecom is now serving businesses of all sizes in Africa with cloud services and products, such as Microsoft Azure, Microsoft Dynamics 365, Microsoft 365, Microsoft Office 365, Enterprise Mobility Suite and Windows 10. The agreement with Microsoft brings together enterprise-grade reliability and performance from the Azure cloud with Liquid Telecom's award-winning fibre network.

Liquid Telecom is also expanding its award-winning East Africa Data Centre in Nairobi, Kenya, which currently houses 2,000 square metres of secured space for data servers over four floors. Along with further expansion of its two state-of-the-art data centres in Johannesburg and Cape Town, Liquid Telecom data centres are home to fibre routes of many major carriers, MNOs, cloud service providers and financial institutions. T

Connecting Africa

Kamal Mokrani, VP Global Infinet Wireless talks to Teletimes at AfricaCom 2017

Interview - Khalid Athar

Khalid Athar: What exactly are you showcasing at AfricaCom? What solutions are you offering to the African market now?

Kamal Mokrani: Africa, if you don't already know, is a Radio jungle. There is a lot of interference in terms of radio spectrum and we have been very busy developing solutions specifically for this market to help our users mitigate this interference. If you look at the 5GHz band, a lot of vendors will come, sell their product, crank up the power as much as possible and it becomes almost impossible for everybody else to operate. This, believe it or not, also happens with any legal bands - you as a customer pay for this band and you expect this spectrum to be clean. Unfortunately, it is not - even if there is a regulator, it is so difficult to enforce it. So, we have come out with what we call "beam forming technology" which mitigates the interference and improves performance by up to 30%. Another technology that we are rolling out and is targeted more for operators is the 1 gigabit per second point to point connectivity which is aimed at the big operators, either fixed or mobile, for backhauling. When we talk about IoT or the 5G revolution that is taking place slowly, the biggest challenge for any service provider will be to cater to these millions and millions of devices that will connect with the internet. 80% of those will have to be connected wirelessly and this is what we are preparing for.

KA: Which products and solutions in specific have been successful for you in this part of the world?

KM: Africa, being what it is, has a big divide between urban and rural users so a variety of products work well here however we know that infiMAN 2X2 which is our point to multipoint solution has been the most selling product pretty much across the whole region whether it is Algeria, South Africa, Kenya or Ghana. This product is attracting most interest from our customer base.

KA: Which areas (both industrially and geographically) do you see most profitable for Infinet wireless in the coming future?

KM: We provide solutions to almost every

segment of the industry whether it is service providers (fixed or mobile) or the enterprise sector, the energy sector, transportation and the government sector and all markets are working quite positively for us. From a geographical point of view, we are very mature and well settled in the Middle-East, Europe and part of Asia. We do need to focus more on the Africa market, the sub-Saharan African market and Latin America (for example Columbia just to give an idea). We are spending on a lot of marketing to create brand awareness and spread our presence whilst recruiting to help us understand and meet the demands of the market. From a profitability point of view, 3 years ago I would have said oil and gas sector is a major area but the oil and gas sector is not generating revenues for people like us as much as it did before. We are planning to bring out new products and a 5G rollout would be the gold mine for us in the sense that 5G will require 10 times more capacity than what is available. I do hope that our future will be 100% linked with the 5G revolution that's happening now.

> **Many applications involving IoT and AI will requite super-fast, super reliable connectivity with very low latency. That is where we could play a signification role"**

For the future, we are looking heavily into Artificial Intelligence driven applications. Many applications involving IoT and AI will requite super-fast, super reliable connectivity with very low latency. That is where we could play a signification role. For example, in the case of driverless cars, we could provide a link from a drone down below to the command center (just as an idea). These applications that will be very popular in the future and might be deployed on massive scale will need a robust supporting network which enables the solutions and that is exactly why we are investing into a lot of research in this area so that by the time these applications become a reality, we are prepared to handle the network for them.

KA: How do you see the IoT market? What is your approach towards this market?

KM: IoT means different things for different people. For us, what it translates into is that we are going to have to increase the wireless capacity by at least 10 times in the next 3 to 10 years. So we are very busy developing solutions, as I said earlier, that can cater to these millions and millions of devices that will be connected.

IoT is linking up everything that needs to be linked whether its smart meters or parking meters, whether they are light sensors for switching street lights on/off or whether they are cameras used for anything from homeland security to speed cameras. At the end of the day, our contribution to an improved society is the improve security and the improve productivity. I am saying this because in Columbia and in Egypt we provided solutions that improved traffic so there is less pollution and less commuting time so people can get to their offices and go back home faster than they used to, giving them more time to either work that is productivity or more leisure time to spend time with their family or something.

If you look at it, through IoT or other deployed solutions, wireless technology can significantly improve people's lives.

KA: Moving into 2018, do you have any plans in terms of changing your overall strategy?

KM: I learned one thing very early in my life that is if you have a football team and its winning, don't change it. In light of that, I believe we changed course 5 years ago and we took a strategic decision to do what we do the best and it has worked for us unlike some of our competitors who spread too thinly and it backfired for some of them. We are going to continue doing what we are doing and keep improving but that doesn't mean we are not going to look into other areas.

The thing about Infinet Wireless is that we are driven by market demand - we don't make products and sell them. We understand what the market demands, we talk to all sorts of players in the market, make commitments about only what is needed and what we can build and then go develop it. So I believe we will continue doing what we do best and keep improving on the same. We will also develop technology and solutions for sectors we are not necessarily involved in today but overall as a strategy I think we got it pretty much under control and will be continuing along these lines for coming future.

KA: How do you see the wireless services

in Africa?
KM: While Africa is seeing an increase in demand for connectivity in order to bridge the ever-present digital divide between urban and rural areas, the bottlenecks experienced when backhauling data streams by service providers of all types is still a major issue that needs to be addressed.

Comprehensive and well-intended rural rollout strategies still remain unaffordable today. High capital and operational expenses, coupled with low population density and lower than average revenue per user (ARPU), often results in the return on investment (ROI) only being realised ten years down the line instead of the desired three to five year's timeframe.

In other words, the costs of delivering connectivity far outweighs the profits that can be generated in these conditions.

This is where wireless technology becomes an integral part of an operator's strategy and to the development of the telecommunications industry in Africa. It is crucial for vendors to assist mobile operators in bridging the gap in order to successfully provide connectivity to the African population as a whole, with a greater focus placed on 4G and ultimately 5G connectivity.

Such wireless connectivity has a lot to offer to the dynamic and active players in Africa. It enables internet service providers (ISPs) to serve more effectively the rural areas, as well as provide more capacity to the bandwidth-hungry urban areas.

These innovative solutions are a cost-effective alternative to the cabled infrastructure which can be troublesome at times - for various reasons - in most African countries. In addition to being ideal for the harsh African terrain, the advantage of a wireless network is that it can be quickly re-deployed, as opposed to a cabled infrastructure that cannot be easily moved to another location. A good example where this would be applicable is with a small business deploying a security system in rented premises: with wireless, the network can be dismantled in a matter of hours making relocation so much easy.

There is no doubt that there is considerable space for the growth of wireless

technologies in Africa, with the main benefit being speed and scalability. Installation is almost four times cheaper than fibre-based networks and take significantly less time. Scaling up is also as simple as integrating another device into the existing network.

A compelling example of leveraging wireless technologies for boosting productivity is within the transportation sector. Not only does public transportation benefit from connectivity, but the rail networks and ports bring control, access, health and safety benefits to a whole new level of efficiency by deploying a wireless solutions.

Agriculture is another area where the need for ubiquitous connectivity is long overdue. Providing access to mobile financial services (to include mobile banking, insurance claims, etc.), voice, internet access, eGovernment and eAgriculture would clearly yield rapid development of this industry and wireless technologies could definitely become a framework for network offshoots towards rural and underserviced areas.

For South Africa, while the deployment of a 100G long-haul network across the country has already taken place, there is still a huge demand for access to communication with a competitive price tag - as highlighted by the recent #DataMustFall campaign. T

Russian companies and organizations actively participated in AfricaCom 2017

Teletimes Report


Valentin Makarov

As Russian ICT, SATCOM and TELECOM companies are getting more and more exposure through participating in the events being organized at regional and global levels, they were very much active in the conference and exhibition in AfricaCom 2017 held in Cape Town (South Africa). The participation of Russian companies in AfricaCom was made possible with the cooperation of Russian Export Center and RUSSOFT (Russian Software Industry) Association. Eugeniia Ponomareva was the coordinator for the event from the side of Russian Government.

Russian Satellite companies RSCC and Gazprom participate independently in almost all important events and they were having their prominent booths in AfricaCom as well.

Valentin Makarov, President of RUSSOFT Association, while expressing his views said, "Our association have over 120 members with over 45000 top level Engineers. We are working in all continents, providing complex IT solutions. For the last two years RUSSOFT became the operator of the SafeNet Working Group of the National Technology Initiative of Russia. We are strongly involved in the R&D in the field of information security and of security of cyber-physical systems".

Valentin further said, "Our success is mainly based on the quality of our educational system, which annually graduate over 50,000 top level software engineers. Their quality is proved by the continuous domination of Russian universities' teams in the ACM International Collegiate Programing Contest".

Andrey Bezrukov, President of Russian Association for High-technology Security Exports commented, "Russian IT and hi-tech companies have accumulated unparalleled experience and developed cutting edge technologies in these areas. Their technologies are some of the very best

in the world".

Olga Biryukova, Managing Director, Russian Association for High-technology Security Exports remarked, "Over many years we have developed a range of advanced technologies in all areas of internet security that now we can share with our friends and strategic partners. Now with the advancement of digital technologies that penetrates in all aspects of the society, the defense of national interests takes on a very new meaning. Digital spaces, digital frontiers, digital attacks have all become a stark reality. A new meaning of sovereignty appeared – digital sovereignty. A country that cannot control its digital space, just as its airspace, is vulnerable to pressures from the outside, as well as from the inside".

Following companies and organizations marked their presence at the Russian pavilion in AfricaCom 2017; Stream Labs, Geoscan, Telebreeze Dragonlearn, Wimark Systems, T8 Ltd., Searchinform Ltd., Market Music Technology, Mobilitylab LLC, SibEdge LLC, Kaspersky, ISS, T-Platforms, SPBEC, Workspad, RUSSOFT, CENTERESIR, ROS Platforma, Infinet Wireless, IANS Concern,Smart City Global innovations, JSC Tronic.

T-Platform

Established in 2002, T-Platforms spearheaded the supercomputer industry of Russia, having currently provided half of the country's most powerful computing systems aggregated performance. Russia's largest number crunching machines designed and built by T-Platforms have been featured in the Top500 worldwide supercomputer rating since 2004, the highest rank being #12.

While maturing as an original design manufacturer of server platforms for high performance computing, T-Platforms ventured outside of its home market and designed JURECA – one of Europe's biggest computing systems at Forschungszentrum Juelich, Germany, currently #29 in Top500. This year, at 'Sochi-2017' Russian Investment Forum, T-Platforms' German project was recognized as Russia's most prominent export achievement by the Prime Minister of Russia Dmitry Medvedev.

The award for the year's best industrial project went to Baikal Electronics – a

Russian fabless semiconductor design house specializing in System-on-Chips with ARM and MIPS architecture. Established in 2012 as T-Platforms subsidiary, the company has now become an independent business serving multiple ODMs in Russian and beyond. Having drawn over $100M investment from governmental funds, Baikal Electronics launched Baikal-T1general purpose microprocessor – the world's first in silico implementation of MIPS Warrior CPU core.

T-Platforms' owner and CEO Vsevolod Opanasenko comments: "T-Platforms Group strategy is focused on designing original IT equipment based on Russian Baikal family CPUs, which build upon well-developed ARM and MIPS software ecosystems. We observe considerable interest towards alternative CPU architectures both in Russia and beyond, and we are committed to bringing our design expertise to partners in Middle East and Africa. We also seek partnerships in supercomputing field, where we offer a unique 360° approach, complete with a turn-key supercomputer modeling and simulation service".

T-Platforms roadmap currently features PCs, servers, network equipment and embedded designs based on both Baikal and Intel processors, the first Baikal-based desktops already being supplied to the Russian governmental customers. Benefitting from ARM and MIPS virtualization technology, Baikal CPUs support multiple OS instances running in parallel, each in its own secure domain, creating novel opportunities for highly secure network equipment, IoT devices, and other systems.

Geoscan

'Company' Geoscan is one of the leading Russian developers and producers of fixed wing, multi-rotor unmanned aerial systems and magnetometer systems, as well as software for processing and analysis of aerial photography data.

The company has joined the development of a worldwide software Agisoft Photoscan (more than 20,000 organization in 103 countries are using this software). Moreover, they develop software for data visualization and measurement. On the other hand, they provide high-quality aerial photography, survey, 3D model and monitoring services for the cadastral area, agricultural, mining as the magnetic survey.

Geoscan has exported unmanned aerial systems to customers in over 12 countries who are very satisfied with quality and after-sales services.

Re-innovating 2G networks

Award-winning innovative approach allows operators to easily and cost-effectively deploy, expand, and future-proof 2G networks

Rajesh Mishra
Founder, President, and CTO - Parallel Wireless

Rajesh Mishra is a visionary who, together with the other Parallel Wireless, Inc.'s founders, accurately identified the need for easy to deploy, resilient and cost effective network architectures that would overcome many of the legacy technical challenges associated with wireless communications — the foundation upon which Parallel Wireless was born. Rajesh co-founded the company after 21+ years of reimagining the wireless, wireline, and cable industry and he leads the technology behind the Parallel Wireless' solutions. As one of the industry's pioneers in convergence technologies, he led the development of next-gen VoLTE and 3G/4G Femtocell convergence servers at Tatara, led transformation of first commercial softswitch into a Wireless MSC product at Bell Labs/Lucent, reimagined cable industry leading IMS servers at Cedarpoint, and led a commercial mobile ad hoc networks (MANETS) development at Powerwave Cognition.

Rajesh's background also includes designing an enterprise Unified Communications System (Whaleback); developing a next-generation soft switch (Excel Switching). At the beginning of his career, Rajesh was involved in early development of analog and digital wireless base stations at Steinbrecher/Tellabs and Hughes Network Systems.

Mr. Mishra has been awarded many industry awards, among them: Lucent Technologies/ Bell Lab Distinguished member award, IEEE paper presentation awards. He also has experience as a spokesperson with industry and business press, analysts and as a presenter at industry conferences.

He has a portfolio of over 25 US and international patents pending and issued. Rajesh holds a BS in Computer Science from IIT.

Khalid Athar: What exactly are you showcasing here at AfricaCom? And how would you like to comment on the event?

Rajesh Mishra: It is our first time in the event but if you want to do business in Africa you have to be here. All the decision makers are here, all the innovative solutions are being showcased here so it's a great event for us and for any other new entrant into this market. And AfricaCom welcomed us not only with their award but also with an amazing audience as well. The reason we are here is that we just launched a unique solution, 2G 3G and 4G solution on the same platform and with easy upgrading capability to 4G so users can deploy 2G today because their subscribers still have 2G phone but when their subscribers are ready to upgrade their devices to 4G apparatus, they can upgrade seamlessly and they don't have to go to site and deploy new equipment - they can just from their data center. The fact that they can switch to base center right now and upgrade to 4G mode is a great value preposition because telecom investment for new coverage is very expensive so being able to deploy 2G today with great technology like ours and being able to upgrade it to 4G tomorrow on the same solution with the same investment makes things much more efficient and affordable.

KA: Can you tell us a little about your award innovating solution for telecom operators?

RM: We have very recently announced the addition of 2G capabilities to our end-to-end cellular network technology. This solution will bring network virtualization principles (NFV) to 2G/GSM to reduce cost and complexity of rolling out or expanding 2G networks while enabling cost-effective migration to 3G/4G. This will benefit the 40% of emerging markets who will still use 2G in 2020 (according to GSMA), as well as developed markets refarming 2G spectrum for use in NB-IoT.

This solution utilizes two main components from Parallel Wireless.

1) HetNet Gateway (HNG), the industry's only 3GPP-compliant 2G/3G/4G network orchestrator that virtualizes essential network functionalities on one platform to enable network simplification and automated maintenance. By unifying and orchestrating any G on a software-upgradable platform, HNG also paves the way for 5G.

2) Converged Wireless System (CWS), world's first 2G/3G/4G base station built using commodity silicon combines Baseband Unit (BBU), Remote Radio Head (RRH), edge router, and flexible backhaul in one small form factor. CWS can provide any combination of 2G/3G/4G access simultaneously and delivers the highest RF output to cover the furthest distance for roughly half the price.

KA: What are the advantages of this solution to your clients?

RM: 2G, though it's an old technology, is still a very prominent technology in developing markets like Africa and India and lots of folks in these regions rely on simple connectivity through voice or simple GPRS data. Current solutions are difficult to install, they take a lot of time and power to install and the power requirements make them quite expensive in Africa.

Our solution provides four-tier access instead of two-tier access - it takes very little power consumption and gives the ability to provide larger coverage at less power consumption. Our solution provides the following benefits to global operators:

Cost-Effective Network Upgradability via Software-Defined Radio (SDR) Functionality

By integrating GSM, UMTS, and LTE on the same form factor, operators can provide 2G access and seamlessly migrate to 3G/4G capabilities at their own pace and budget with a software upgrade from HNG, without replacing the equipment onsite.

Improved End-User Experience

Since all traffic, licensed or unlicensed, is orchestrated by HetNet Gateway's virtualized real-time 2G/3G/4G SON, this solution allows end-users to switch between cellular and Wi-Fi technologies automatically without impacting their experience.

> **"Our solution will bring network virtualization principles (NFV) to 2G/GSM to reduce cost and complexity of rolling out or expanding 2G networks while enabling cost-effective migration to 3G/4G"**

Architectural and Operational Simplification

Through HNG's Network Function Elimination (NFE) approach, operators can combine 2G, 3G, 4G gateway functionalities on one platform to simplify deployment and maintenance of any G networks. Real-time SON on HetNet Gateway automates ongoing maintenance via self-optimization capabilities.

Lowest TCO on the Market

Easy installation and the ability to run 2G/3G/4G on one solution along with flexible in-band relay/meshing backhaul reduces operators' CAPEX. Lowest power consumption and network automation reduces OPEX, so operators can increase profitability throughout the entire network lifecycle.

KA: Would you like to say something about the award you have won at AfricaCom?

RM: We are also very grateful AfricaCom judges for recognizing our innovation and our team members for all the hard work and dedication and of course our customers because we couldn't have done this without them, thank you to them for believing in us and employing our solutions all over the world.

KA: Would you like to elaborate in which areas Parallel Wireless is working? And in which countries?

RM: We are an M2M solution provider for 2G, 3G and 4G. Our solutions are not only cost effective to deploy but are also cost effective to maintain and because of our innovation we have been employed in Telefonica in Latin America and with British Telecom in the UK (They were actually our first customers). We have been deployed in APAC, in Northern America, with Ice Wireless in Canada and we have been deployed in Australia where we are helping them bring new coverage to cover mobile blackspots in the country.

KA: How do you see the African market for your technology and how has the market evolved over the past few years?

RM: Africa is a great opportunity - it's a developing market, it's growing, and there is so much currently happening in Africa. Our mission is to connect and breach the digital divide. So, with our technology we can help the African continent to enable Mobile Health services, Mobile Education, enable new business opportunities and it's all happening, so its great opportunity for us to enable mobile operators to deliver all these services cost effectively.

KA: Moving into 2018, what new plans are to be implemented by Parallel Wireless?

RM: We have a lot of deployments in Africa already which we hope to announce soon and continue deploying in this beautiful continent. Our focus in the near future is to work on more projects within Africa and connect the entire region through our solutions.

We are also working on trials in the Middle East market and would announce our projects in the region soon. T

Close to the edge: How service providers can meet and exceed expectations within the modern broadband marketplace

Thomas W. Willson III

Today's operator and service provider environment is highly challenging. The Telecommunications sector is moving as fast as it can to adjust and react to the events happening around it, which are greatly changing the field of play and its rules. It's much like the automobile industry, regarding driverless cars. What used to be an interesting topic of discussion with futuristic means and thought to be so far in the future, yet now, soothsayers of the industry, like Bob Lutz, former Vice Chairman of GM and having had experience leading many of the cherished names in the Industry, states in Automotive News and then reverberates again through an CNBC interview, how the driverless companies such as Uber and Lyft will make the automobile manufacturers, white label wholesalers eventually, in a sense.

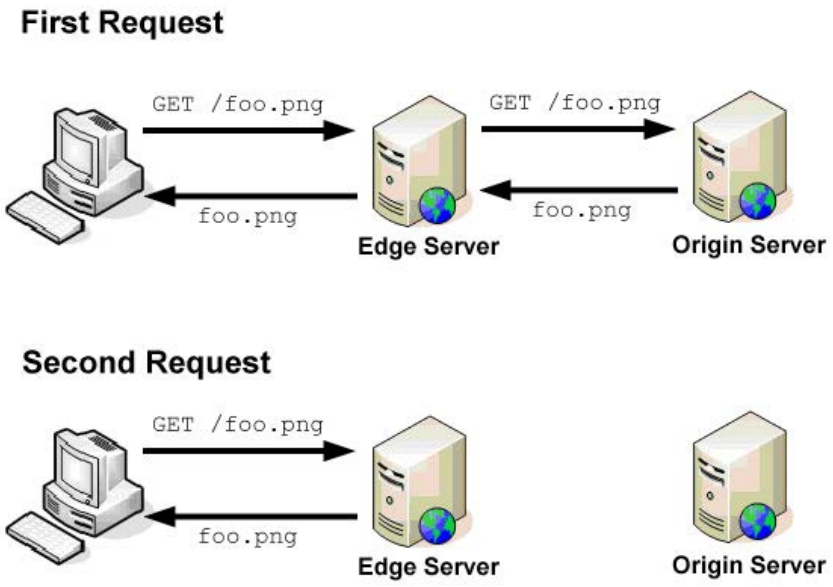
Operators are facing similar types of challenges, where applications at the consumer level, in use of devices attached to the network are driving huge change. Everyone knows how the OTT have altered the future so to speak. Mobile devices are literally driving the market to places it has not ever been before and literally, everyday challenges to status quo are being made. The operators used to look at the OTT's (Over The Top) as a coven, where its edacious manners would be something they could tame with blocking, or emulating in one form or another, yet no operator worldwide has been able to chain tightly enough, the growth of applications driven data and content, enough to temper the explosive effects to operator's networks and infrastructure. In a sense, at sometimes, the appearance of an internecine match has been produced, where both sectors (content owners/drivers and the operators) will have to work together one way or another, for both need each other to certain extents.

One way however operators can close the gap regarding image, brand as well as monetarily, is to cut down on latency and reduce the element of surprise when a webpage actually loads as quickly as a

quarter of a second, which tends to match Googles expectation of a great Internet user experience. It seems sometimes, with metrics ranging all over the place in network access time, there is no consistency that can be found other than inconsistency in IURL download times.

Low latency connections reign supreme in todays high expectation broadband markets. Customers not only want, but expect, lightning fast load speeds when doing just about anything and everything on the Internet at literally any time of day. This has created numerous obstacles but also great opportunities for broadband providers worldwide. With shrinking margins and ever-increasing competition, the operator that can deliver content at breakneck speeds will experience lower customer churn and attract new customers by simply establishing and maintaining themselves as the fastest option in the market. Simple, right? Well, kind of...

Operators are facing many obstacles with reducing latency. Advanced (IMT 2000 ITU Standard) LTE (long term evolution), as well as standard LTE and WIFI technologies allow for fantastic performance, when compared to performance numbers of just five years ago. Cache has been a model of great efficiency for operators and CDN (content delivery network) companies, and is usually employed in the core. That said, the idea of caching at the edge (tower) may produce further results, which appear advantageous.



Every advantage counts these days, but very few bits and pieces of a modern broadband network can deliver as much performance improvement as edge caching, which allows providers to localize popular content, thus preserving network core and backhaul capacity and in turn, deliver exponentially faster content.

Serving content directly from the edge avoids the time consuming, multiple-step approach of edge-to-core-and-back data travel, thus offering users searching for popular content, a potentially seamless and uber-efficient Internet experience, void of the typically slower load times caused by greater geographical distance. Meeting the bandwidth needs of the future will depend heavily on a service provider's ability to optimize their respective infrastructure and avoid spending costly resources on expanding equipment presence and developing denser physical networks.

Edge caching will, without a doubt, exist as an integral piece of this optimization pie going forward, allowing for the alleviation of network congestion and greater opportunities concerning the monetization of OTT services across the last mile.

For one, content storing at the edge will produce excellent content access times for users, allowing for even faster than a quarter second load times for content cached locally at the tower. The speeds will provide customers a better user experience. This is only one benefit.

Additional benefits will arise from greater efficiencies regarding backhaul between the edge towers and the EPC (LTE) networks. If content can be sniffed out and returned at the tower, the engineering requirement for bandwidth scale, will be far more efficient (lower) than the tortile network environment that exists today. If a network consists of ten thousand towers in a large regional network, you can easily conjure how these savings can be large.

Bringing the content closer to its final destination is as discussed briefly above, in many ways, a common sense solution to providing faster network speeds, more efficient delivery of popular web content, and a substantial reduction in network operating costs. Backhaul and transport costs often exist as some of the most expensive aspects of a modern mobile network, so by focusing on caching at the edge of the network, operators can cut expenses, while exponentially improving network performance. This means higher margins and much better user experience for customers in operator networks who today, feel pressure from multiple fronts, to provide download speeds rivaling that of an intergalactic spaceship.

Furthermore, the real caveat of value for operators and consumers alike, will be how edge caching could bring monetization and value of the last mile to operators who provide access to end users, for being able to provide potential content owners, a better experience for the eyeballs viewing their content, would provide incentive for all involved, where the OTTs (content providers, drivers, etc.) would partner with operators who do cache at the edge to gain an edge on their own market competition and the operators benefit by building a much stronger positive user experience, thereby guilty by association, telco brands may be elevated to levels not seen in many years, if ever. To turn an asset which has been vilified by all stakeholders it seems over the years, the last mile, to a vital and thriving asset, would truly be an ascendant occurrence.

Service providers and Mobile Network Operators have a chance to truly leverage the last mile, and that would be tantamount to owning the holy grail, would it not. T

Ooredoo Oman signs B2B agreement with Punj Lloyd Group

Reinforcing its role as the digital partner of choice to Oman's leading companies, Ooredoo signed an agreement with international Engineering, Procurement and Construction (EPC) giant, Punj Lloyd Group to provide its operations in Oman with a full range of Business-to-Business (B2B) solutions. Under the agreement, the group will acquire access to state-of-the-art leased line, fixed line, and mobile solutions.

Sultan Al Wahaibi, Chief Business & Wholesale Officer at Ooredoo, said, "Our agreement with Punj Lloyd Group is reflective of our efforts to continue offering B2B customers tailored solutions to meet their current and future needs. This dedication to service excellence in the B2B

sector has added yet another high-profile name to our client portfolio. We aim to provide them with the transformative voice and data services which have continued to exceed expectations throughout the Sultanate."

Ooredoo's wide range of innovative business products and services has gained a large following amongst entrepreneurs, local businesses, and multi-national corporations operating in Oman. Serving customers across a multitude of economic sectors, the company's tailored solutions are shaped to transform businesses of all sizes to help them achieve growth and contribute to the Sultanate's development. T

teletimes INTERNATIONAL

Smart City and ICT Policy in Moscow

Dmitriy Karandin talks to Teletimes International about Moscow IT's Smart City initiatives and the IT policy in detail

Interview: Khalid Athar

Khalid Athar: Can you brief us on the Moscow's IT policy and Smart City strategy? How does the environment support new technologies and startups?

Dmitriy Karandin: In 2011 we developed a strategy for Moscow smart-city development called Information City which has been extended until the end of 2018. With a US$600 million annual budget, we have invested in ICT infrastructure development and M2M projects, e-healthcare and e-education, public services delivery, citizen engagement and much more. All solutions are included in the smart city concept and we are more than sure that our practice will become a vital asset for other cities in Russia which will step on the path of smart city development. The remarkable expansion of ICT-related markets and the emergence of new areas of ICT usage pose unprecedented challenges and bring forth new public policy objectives, as reflected in the 'Information Society Development Strategy in the Russian Federation', the State Program 'Information Society 2011–2020', and in strategies for development of information technology (IT) in the Russian Federation for 2014–2020 and up to 2025.

Smart City Lab, created in August 2016, is intended to search for innovations and apply new disruptive technology that will make our city better.

One of the Moscow smart city strategy's main directions is to provide a friendly environment for business development. There are around 30 technology parks and technopolises in Moscow which support more than 1,300 high-tech companies. We provide grants and subsidies for innovative small and medium enterprises to support them.

KA: It is quite interesting and applaudable – what you are doing with the e-learning initiatives with 900,000 pupils and 65,000 teachers connected through a Cloud-based platform. Can you tell us about this program in detail?

DK: Thank you. Our project is one of the biggest e-learning projects in the world with investments of around 300 million US dollars. The online school connects hundreds of thousands of pupils with teachers, increasing literacy across all segments and reducing cost from a school administration point of view. The details of the project are as follows:

Moscow online school - a cloud-based educational platform:

- Connecting 900 000 pupils, 65 000 teachers and 773 schools it is the largest e-learning project worldwide;
- Educational content library contains 44,000 lesson scenarios and 542,000 content units - textbooks, assignments, tests, presentations, videos;
- Moscow investments in e-learning - $300 mln investments in school infrastructure in 2017-2018 (Wi-Fi access in every classroom, 81 inch wide interactive panels instead of whiteboards and 100 Mbps broadband channels in all schools);

The results – in less than one year after the implementation of the system, academic progress grew by 15%, while the implementation of Smart School administration has resulted in 88% cost savings.

FUTURE PLANS FOR 2018:

- All schools will be provided with tablets for pupils and teachers, interactive whiteboards, digital checkpoint systems
- 100% of schoolbooks and additional materials will be transferred to digital sources
- Further implementation of VR and AR technologies in schools

KA: Please tell us about the "Active Citizen" and "My-Street" initiatives. What are the achievements of these projects and what is your vision for the future with these initiatives?

DK: The Active Citizen is a digital platform with a website and an app for voting on city development matters. This is where people vote on issues of city development, such as public transport routes, speed limits, new parks, etc. It currently has 1,9 mln+ users with 2600+ votings held and 1500+ decisions implemented.

We collect data from different sensors, meters and cameras etc. to see the situation in the city and combine that with the data we can receive directly from the citizens to better understand which areas need more attention such as renovation etc. and then take actions accordingly.

My Street is the biggest urban redevelopment project in the world with a $1.6 billion investment. Through My Street,
- 216,3 km of streets have been redeveloped within less than 3 years
- 234 renovated streets and 2417 historical buildings
- 12,788 planted trees
- 0,5 million citizens expressed their opinion on redevelopment through e-voting
- 75% of Moscow citizens are completely satisfied with the redevelopment results

This project has been a huge success and has visible positive results. In fact, the number of pedestrians on redeveloped streets increased by 70% while 30% of Muscovites started walking more in the recent 2 years.

Other results include:

- Sidewalks were made wider by 50–200%
- 400 + ground level pedestrian crossings were created
- 600 km of air cables were moved underground
- Number of ground transport passengers in the city center increased by 50%

Today, 70% of police investigations are conducted using the system and up to 50 000 penalties are made out automatically every day. This is all enabled through 24/7 monitoring of the situation in the city"

- Citywide bicycle rental, 20 km of cycling lanes
- 17 new routes— public transport in the areas where it was not available before
- 400 modern bus stops with free WI-FI and USB charging stations
- 151 new passenger shelters with easy directions, displays, free Wi-Fi and ticket vending machines
- Average speed in the city center increased by 7%
- Total amount of traffic accidents decreased by 37%

Our key targets with the project are to improve the quality of life in the city by creating comfort and safety for the citizens, reducing traffic congestion, creating more green areas, building smart infrastructure and revitalizing public transport.

KA: You have been internationally recognized for deploying an excellent city surveillance system with thousands of CCTV cameras. Can you tell us about this system, it's impact on the city's security and about the system's own security?

DK: The city video surveillance system comprises a network of video cameras and the Single Data Storage and Processing Centre. Around 160,000 cameras cover the transportation system, cultural, sporting and social facilities.

Moscow video surveillance system has contributed significantly in increasing the city's security which is why today, Moscow's security system is one of the most advanced in the world. According to a survey conducted by Frost & Sullivan, Moscow is among the Top 10 cities in the world with the best ICT urban security technology.

This system is significantly helping us in city management and reducing crime. Today, 70% of police investigations are conducted using the system and up to 50,000 penalties are made out automatically every day. This is all enabled through 24/7 monitoring of the situation in the city

We have a very well established cyber-security system that covers all the counters of the Moscow IT systems. I do believe that cyber-security is extremely important, with regards to CCTV cameras and also extending beyond that to all the government services as any one compromised part of the system can weaken all other parts.

With regards to cameras specifically,

our project is handled by the telecom operators in the country with equally divided responsibilities. The operators are responsible for the security of the system and are doing a good job in keeping the system very safe.

KA: Would you like to tell us about some of Moscow Smart City Lab's Future-Tech based initiatives and programs such as AR/VR?

DK: We are successfully employing IoT, big data, machine learning, augmented reality, virtual reality and other advanced technologies in our education, healthcare, transportation, and safety projects; and Smart City Lab acts as a center that synchronizes and coordinates all technology activities and ensures synergy.

We provide over 200 public services online or via mobile apps – from arranging an appointment with a doctor to paying for the parking, everything is available via one click at Mos.ru portal. In 2016 Moscow became a finalist of World Smart City Awards for its "city as a service platform" - the system of public services management and delivery. Our next aim is pre-delivery of public services, meaning that a citizen doesn't need to apply for a service, as the state acts proactively. E.g. when a child turns 7 years old, his/her parents are automatically informed by the state authorities about 3 possible school options located in their neighborhood. Another example is when citizens get reminders to change passports when they turn 20 or 45 years old. We are using big data to make this level of service possible. T

Redline Communications partners with SOCIUS Group to expand presence in sporting and construction sectors

Redline has partnered with SOCIUS Group to develop the infrastructure to expand into new sectors including communications packages for venues like golf courses, marinas and construction sites.

SOCIUS will focus on establishing Redline's presence in the UAE market with a specific focus around golf courses, sports venues, marinas and construction sites. The company plans to scale the business through 2018 into the other GCC countries and then identify wider opportunities within EMEA.

Julian Danby, Partner at SOCIUS Group, said, "At SOCIUS Group we strongly believe in the digital revolution and how new digital innovations can bring a lot of value to organisations around the world. Through our partnership with Redline Communication, we believe that together we can be a great influence in this movement and we're excited to be working together. Redline's network and wifi solutions promote operational efficiencies, cost savings as well opportunities for new revenue streams, with additional key benefits such as enabling greater health, safety and security within the venues that we cover."

(L to R) Julian Danby, partner at SOCIUS, Ara Krishnaswamy from Redline, Simon Hobart, partner at SOCIUS, and Guru Padmanabhan, VP at Redline

SOCIUS Group is a strategic business development company that helps and supports the growth of its clients within the MENA region. As part of the agreement with Redline, the company will identify new channels and facilitate sales through a strategic go-to-market plan.

Guruprasad Padmanabhan, Vice President for Business Development for Middle East & Africa (MEA) at Redline Communications, said, "We are known for providing effective wireless solutions for large venues like stadiums etc and this partnership will allow us to explore and work with some of the world-class facilities that the region offers its sports fans. We are looking at three key areas that are a passion for this region and SOCIUS Group has the capability to expand into these sectors." T

ARTICLE

How satellite networks can protect connected cars from getting hacked

By Vinit Duggal, Chief Information Security Officer - Intelsat

Hardly a week goes by without the announcement of another large database of consumer information being hacked by unknown cyber criminals. The breach of credit card or identity data is serious, but the potential harm is mostly financial. However, as auto manufacturers begin to use technology that connects cars and trucks to the Internet, hacking of those vehicles could result in passenger injury or even death.

Over the past decade, computer-based electronics have replaced many of the mechanical and pneumatic systems which control braking, acceleration, steering and other critical operating functions on vehicles. The computer systems run on hundreds of millions of lines of software code that need to be managed and updated, a task traditionally done when the vehicle is at a repair shop.

But the auto industry is moving toward updating vehicle software by using mobile networks on a global scale, opening up the possibility that hackers could break into vehicle networks. Imagine a hacker being able to control the locks on a car's doors and demanding a ransom payment to unlock the vehicle. Or worse, imagine the accident after a hacker suddenly slammed on the brakes of a car going 65 miles an hour on a crowded Los Angeles freeway.

In addition to the vehicle control network, newer cars are being equipped with more sophisticated entertainment and navigation systems that rely on access to the Internet to download movies, maps, and information about traffic conditions. Making sure that these two networks are isolated from one another is critical to the cyber security of the vehicle's control network. This segmented connectivity has long been a standard in the commercial airline industry, where the systems that operate the aircraft are isolated from the in-flight entertainment networks that deliver content and Internet services to passengers. The auto industry needs to adopt the same concept of having the right segmented architecture between the electronics that control a vehicle's movement and the systems that download entertainment or provide other information to drivers and passengers. There can be no bridges between these two information hubs.

In order to achieve a closed loop vehicle control network, auto manufacturers need to work with the hundreds of vendors who supply the many parts that go into these systems. They also need to be sure that the mobile network providers with access to the car have their own security systems in place to prevent unauthorized intrusion over the Internet. With so many vendors involved, it is the responsibility of the car manufacturers to set the security standards for any device inside the car that relies on software. While security of the vehicle control system is essential for passenger safety, keeping hackers out of the entertainment or other networks in a car is also important. For example, parents would not be pleased if a hacker started delivering inappropriate content to the TV screens of the children sitting in the back seat.

One major advantage of using satellites to deliver updates to a car's software is that the satellite network can be designed to be completely isolated and purpose built, with limited vectors available to hackers. This is in stark contrast to the wireless sector. Satellite networks such as Intelsat's offer multiple layers of cyber protection and isolation for critical systems that make compromising significantly more challenging for bad actors. This level of network security is one reason the U.S. government turns to operators like Intelsat for satellite services needed by military units around the globe.

We have been engaging with the automotive community regarding the connectivity and cyber benefits of using satellite for software updates to vehicles. Such a design would need to be built into the car at the factory so that the vehicle could be equipped with a flat panel satellite antenna. These antennas, manufactured by Kymeta and others, have the capability to send and receive high volumes of data. Another advantage of using satellites for the software updates is that a single broadcast transmission from a satellite can update the software on every target car within the geographic footprint of the satellite beam, inclusive of an acknowledgement from the auto confirming the update was received error free. Using mobile networks for the software updates would require auto manufacturers to work with different service providers all over the globe to make the same updates, complicating the solution and raising questions of who would be responsible for paying for the mobile data plans.

The connected car promises to save the auto industry millions of dollars a year by avoiding costly recalls to update vehicle software. Connecting vehicles to the Internet will also provide more entertainment options to passengers and real-time information to the driver about road and traffic conditions ahead. Making sure that these networks are isolated from one another is essential to preventing intruders from endangering the lives of the people in the car. And using satellites to remotely access the vehicle's control system will provide auto manufacturers with the highest level of network security available. T

Hughes signs $190M contract with OneWeb

Hughes Network Systems, LLC (Hughes), the global broadband satellite solutions and service provider, announced that it has signed a contract for $190M with OneWeb for the production of a ground network system, supporting OneWeb's constellation of Low Earth Orbit (LEO) satellites in its mission to bring affordable broadband service to millions of households, schools and other end users around the world.

This contract builds on the original system development agreement between the companies signed in June 2015, bringing the total value of both to over $300M. It includes production of the gateway sites each with multiple tracking satellite access points to support operation and handoff of high-speed user traffic between satellites.

"The start of production of the ground system is a major step towards fulfilling OneWeb's goal of bridging the digital divide, leaving no one behind," said Greg Wyler, Founder and Executive Chairman of OneWeb. "Hughes has been an outstanding technology partner and we are excited to deploy this essential part of our network as we ramp up to launch the first of our fleet early next year and provide service to every rural home in Alaska starting in 2019."

"Designing a ground system capable of supporting hundreds of LEOs with seamless handoff of broadband traffic between satellites presented a significant challenge," said John Corrigan, senior vice president of Engineering for Hughes. "But our team was up to the task, and we are proud to be partnering with OneWeb on realizing this revolutionary satellite communications system to close the global digital divide."

Joint development of the ground network system began approximately two years ago. The current agreement includes equipment to support multiple satellite access points in gateway locations around the world, each including a custom switching complex, outdoor modems, and power amplifiers. Shipments are expected to begin in mid-2018. T

Airbus signs in orbit demonstration contract with ESA

Airbus Defence and Space has signed a contract with the European Space Agency (ESA) for an in-orbit demonstrator within the frame of ESA's Advanced Research in Telecommunications Systems (ARTES) Pioneer programme.

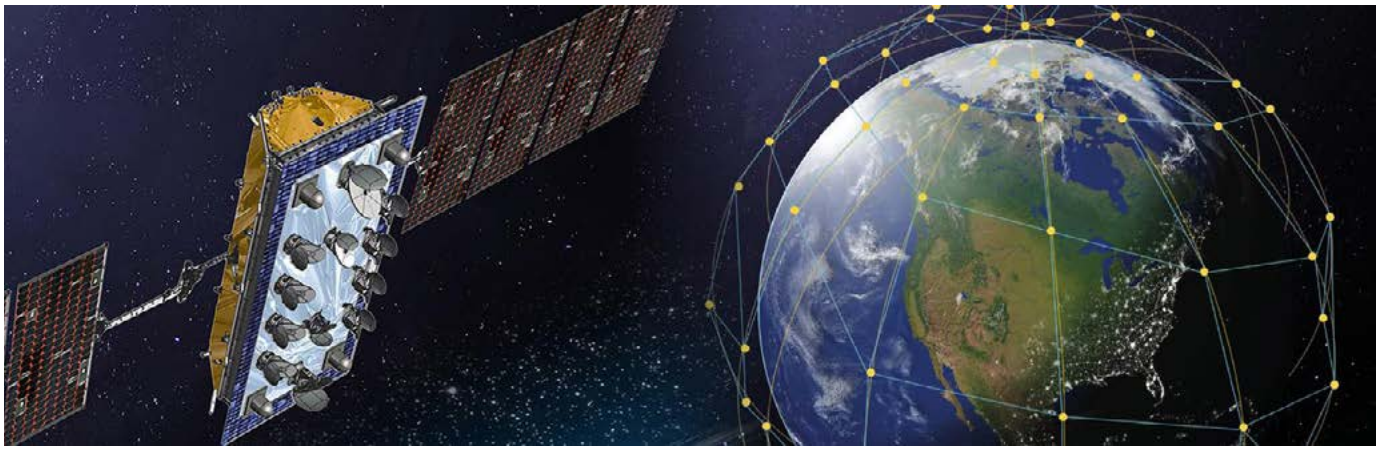
The in-orbit project (known as IODA – In Orbit Demonstrator by Airbus) will develop the key elements including infrastructure (spacecraft, payload and ground segment), launch a first satellite and validate the entire system in a multi-mission scenario.

The final objective for the IODA is to offer a one-stop-shop service for In Orbit validation and/or Proof of Concept (whether technology or service based), in a real operational environment leading to a improved prospect of market take-up.

Arnaud de Rosnay, Head of Telecom Satellites in Airbus said: "This partnership with ESA should greatly facilitate future in-orbit validation of new concepts, systems and technology relying on the proven technology that will be OneWeb. Not only will it be available to all European spacecraft manufacturers it will also be a resource for new space downstream entrepreneurs to prove and de-risk their new technologies and mission concepts in orbit. Our aim is to greatly enhance mission validation for existing and new entrants in the space sector offering advice and expertise covering everything from payload architecture, to innovative and automated integration processes as well as ground segment support, operations and end-to-end system support."

Magali Vaissiere, ESA's Director of Telecommunications and Integrated Applications, said: "Pioneer supports the emergence of commercial European entities with the ability to offer fast and affordable access to space to public and private customers in the field of satellite telecommunications. This programme creates new opportunities for both established and new players in the fast-changing and competitive satcom market. The Airbus IODA project confirms the strong support of our Member States and industry to this initiative." ESA's Pioneer Partner programme aims to facilitate the emergence of Space Mission Providers (SMP) who can provide timely, cost-effective opportunities for public and private customers to access space. T

Globecomm to explore expansion of worldwide network with LeoSat



LeoSat has entered into a MoU to explore a potential service agreement with Globecomm.

LeoSat's earth encompassing satellite constellation, in effect, an optical backbone in space, can provide instant infrastructure from anywhere to everywhere which is fast, secure and reliable, opening up a wide range of new opportunities for companies such as Globecomm looking to expand their existing network capabilities.

The increasing demand to move large quantities of data quickly and securely around the world is fast outpacing the infrastructure in place to carry it. In 2015, global networks for the first time carried more than 1 Zeta Byte of traffic globally and this is forecast to grow exponentially.

LeoSat's unique new network delivering fiber-like symmetry at gigabit per second speeds has been designed to solve essential communications and connectivity issues and provide service without compromise to the harshest environments and the most remote areas for customers in sectors such as multi-national enterprise, oil & gas, maritime and government services.

LeoSat's Chief Commercial Officer, Ronald van der Breggen, said: "We are delighted that Globecomm, a trusted provider of robust connectivity for mission-critical communications, is considering LeoSat to expand and future-proof its infrastructure. Clearly we're very excited about this sign of confidence: By combining high speed and high throughput with low latency, high security and global availability, LeoSat's constellation is well on its way to becoming a game-changer for business connectivity".

Ronald van der Breggen

Bryan McGuirk

Chief Commercial Officer Bryan McGuirk of Globecomm said, "We strongly believe in offering the smartest connectivity solutions to our customers, and with capabilities beyond satellite and fiber, LeoSat represents the next generation of high-performance communications networks".

LeoSat is currently working with Thales Alenia Space, a company with unmatched expertise in designing and manufacturing LEO satellites, to finalize the manufacturing plan, paving the way for the production and deployment of the entire constellation. T

du is leading the way on how corporate enterprises can support SMEs and Startups at this year's Entrepreneur Enterprise Agility Forum

The Enterprise Agility Forum 2017 presented by du tackles how corporates can better support the MENA startup ecosystem

du is continuing the conversation around how corporate entities in the Middle East and North Africa can encourage a more supportive ecosystem for SMEs and startups, via its participation and support, at the annual Entrepreneur Enterprise Agility Forum – presented by du – which was being held in Dubai.

Hany Aly, du's Executive Vice President of Enterprise Business, delivered a key note presentation titled 'Success in a time of rapid transformation'. The Entrepreneur Enterprise Agility Forum 2017, now in its fourth year, is an open-forum session for SMEs to interact with both large enterprises, and a diverse range of other start-ups, in order to generate the exchange of peer-to-peer learning.

Fahad Al Hassawi, Deputy Chief Executive Officer, Emirates Integrated Telecommunications Company, explains: "At du we believe in supporting entrepreneurs and SMEs in their journey of growing their business, by helping them to navigate and leverage latest technologies. The SME segment, and startup scene is very vibrant, and as such we have tailored our enterprise solutions to fit their needs, as they are an important part of our society. By helping to achieve a well-rounded approach to promoting business for the UAE, we are creating a prosperous society for many years to come, encouraging a new breed of entrepreneurs that will continue with a more supportive business ecosystem."

This year the panel sessions are focusing on the first steps of entrepreneurship, and how those just starting their journey can be supported by larger companies. The first talk, entitled, Rolling with the Punches: Tackling Obstacles (and Failures)

in Entrepreneurship, will discuss how to get through the teething pains associated with a new business. These teething pains often put many off of becoming entrepreneurs, and so the next talk, Walking the Talk: Encouraging Entrepreneurship in MENA (For Real) will explain how corporates can help encourage all kinds of people to take the plunge and develop a startup or SME.

This is furthered in the final panel, From MENA to the World: Funding Innovations that can go Global, which will talk about how enterprises can startup funding initiatives to help stimulate the entrepreneurial market in the MENA region.

Furthermore, the panelists will be discussing the various challenges for corporate enterprises looking to support the SME and startup sectors. Hany Aly mentioned how du supports both SMEs and startups, and is at the forefront of enabling digital transformation for UAE businesses. T

du and UIB collaborate to introduce region's first single solution for telecom customers using AI

du and Unified Inbox (UIB) announced their strategic partnership to bring to the UAE market a new, convenient, and secure way for users to communicate with du and everything meaningful in their daily lives without downloading another app or using a separate web-based service.

The announcement was made during GITEX 2017, the Middle East's largest ICT show which brings together technology leaders from around the world. It is in line with du's long standing association with the Dubai Future Accelerators.

Samer Geissah, Vice President, Innovation at du said: "Our association with the Dubai Future Accelerators gives us the agility to bring innovative solutions to our customers today. In line with the recent UAE Artificial Intelligence strategy made by His Highness Shaikh Mohammad Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, we are already able to support our government in its Vision for 2021 and beyond."

The benefits of working with the DFA are many-fold. Under the directive of the UAE leadership, the DFA fosters innovation and collaboration at its incubation centre in Emirates Towers to ensure that we resolve the issues we face more efficiently. The association with DFA has enabled du to further its investment in the entrepreneur community and facilitate a knowledge sharing environment, putting innovation into action in the UAE.

In line with this association, the between du and UIB will integrate UIB's Artificial Intelligence (AI) messaging capabilities in du's network, allowing users to benefit from UIB's UnificationEngine™, an AI-powered Internet of Things (IoT) messaging platform. Customers will not only be able to communicate with du's customer care and services but can eventually also control the devices in their smart homes and offices via simple text and/or voice messaging on the channels of their choice including WhatsApp, Facebook Messenger, Skype,

Samer Geissah
Vice President Innovation - du

WeChat, and many others. UIB's ability to enable communications with customers in natural language text and voice messaging will provide a simple way for users to access all of their IoT devices. The service will have significant applications and benefits for du's enterprise customers who will be able to control their smart industries, smart manufacturing equipment, and their smart offices via a single contact in their smartphones. It facilitates ease of control and simplicity for du's enterprise customers and also reduces costs and increases productivity.

Another exciting feature of this technology will be the option for customers to avail various offers based on their location/time or on demand by simply chatting with du like you communicate with a friend. The service will be available in English and Arabic with the option of adding more languages in the future.

UIB was recently selected to participate in Dubai Future Accelerators' third cohort, where it is working directly with du and alongside other government bodies. The partnership brings the newest intelligent IoT messaging technology to the region already leading the world in its introduction of innovative and disruptive telecommunications services.

Geissah added: "We are excited to be the first ones to introduce this revolutionary technology in the UAE which will help both our individual and enterprise customers. Our vision is to allow customers to ask us anything through their preferred way of communications such as WhatsApp, and together with UIB, it will become a reality for our users to communicate with us and also control their smart devices via simple messaging in their preferred platform and language."

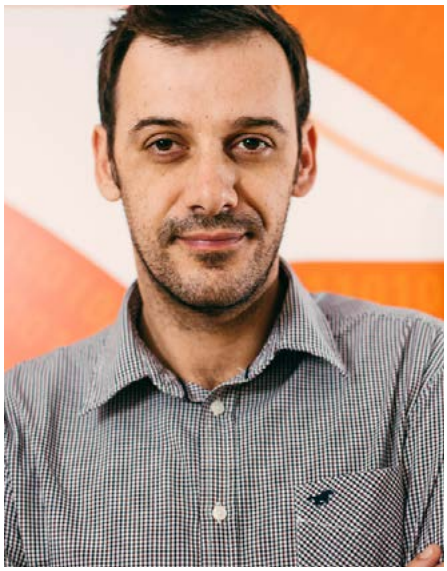
Using AI with Machine Learning (ML) and Natural Language Processing (NLP), UIB will be developing a dedicated assistant for du's customers that will cater to all their needs.

The choice of channel and language, whether text or voice, along with no need for a separate app will save time, increase loyalty, and most importantly, build "conversational relationships" with du's customers. These conversations will allow du to better understand customers' needs and requirements, building upon the warm relationships du enjoys with its customers. For example, as WhatsApp is already an essential part of customers' daily lives and is used to communicate with colleagues, friends, family members, and even customers, bringing all of the users' communications needs into a single contact on WhatsApp will bring them one step closer to du.

UIB CEO Toby Ruckert added, "We are very happy to be working with du, one of the world's most innovative and customer-oriented consumer and business brands. We will be working very hard to ensure du's customers are able to enjoy easy access to all of their services and devices without the need for separate apps, calls, or web services. Our focus is to enable du's customers to chat with du as easily as they chat with their friends, on their favorite social media, messaging, and chat platforms." T

Infobip expands into Pakistan, opening its 55th office in Islamabad

Fakher Dawar



Silvio Kutic, President & CEO - Infobip

Infobip, the global cloud communications provider for enterprises opened its offices in Islamabad.

Infobip reaches 8.5 billion mobile devices connected to over 800 telecoms networks globally and holds offices all over the world.

The Islamabad office is the 55th office opened internationally. The office is part of an instrumental expansion in the South Asia region and will provide the company more in-depth understanding of local market conditions. The Pakistan office will allow Infobip to develop its business relationships and partnerships further broadening its wide network of clients and partners.

"Our dedication to Pakistan is instrumental to our expansion in the South Asia region. We recognize the local skill sets needed in each market and country we enter and we are thrilled to open the doors to our Islamabad office. We can't wait to build our company stronger here with local talent and salesforce", said Silvio Kutic, President and CEO at Infobip.

In Pakistan, Infobip will focus its business on providing enterprise messaging services to businesses looking for not only local, but also regional and global coverage. A major segment of the business initiative is services and products driving revenue from A2P SMS messaging for mobile operators. T

PTCL & 1LINK sign agreement for hosting their Primary Data Center facility

Aftab Raza Khan

PTCL, a subsidiary of Etisalat, has inked a Data Center Hosting agreement with 1LINK Guarantee Limited, which is the largest national payment network in Pakistan for Automated Teller Machines (ATMs) and Point of Sale (POS) network, for a term of three years. This initiative will be deployed at PTCL's Data Center facility in Karachi

The agreement was signed by Farooq Ahmed Jalali, EVP Digital Services, PTCL and Najeeb Agrawalla, CEO, 1LINK (Guarantee) Limited. Those who were present on the occasion were Dr. Daniel Ritz, President & Chief Executive Officer, PTCL, Umar Farooqi, General Manager, Digital Services, PTCL, Azimullah Khan, CIO, 1LINK (Guarantee) Limited, Bashir Khan, COO, 1LINK (Guarantee) Limited, Azeem Siddiqui, Head of IT, 1LINK (Guarantee) Limited, along with other officials.

Dr. Daniel Ritz, President & CEO PTCL, said, "PTCL's customer-centric strategy coupled with its modern & reliable network is the first choice for enterprises to avail one-window ICT solutions. 1LINK has conveyed its trust on PTCL by awarding its production site to us which validates the reliability of PTCL Data Centers in the region's telecom market."

Najeeb Agrawalla, CEO, 1LINK (Guarantee) Limited, said: "The synergy of PTCL with 1LINK is an ideal alliance to achieve 1LINK's goal to deliver exceptional client experience and inclusion of next-generation applications by virtue of PTCLs' huge and resilient infrastructure. This agreement portrays 1LINK's full confidence on PTCL's network infrastructure and expertise in the field of ICT & Data Center Facility and opens the doors for further collaboration with PTCL on exciting customer centric products." T

PTCL wins 'EFP Award on Best HRM Practices 2017'

PTCL has won 'EFP Award on Best HRM Practices 2017' in recognition of its Best Human Resource Management practices. Syed Mazhar Hussain, Chief Human Resource Officer, PTCL, received the award on behalf of PTCL from Ms. Margret Adamson, Australian High Commissioner, who was the chief guest at the event organized by the Employers' Federation of Pakistan.

Speaking on the occasion, Syed Mazhar Hussain said, "It is an honour for us to stand out from other organizations of the country to win this prestigious award on best HRM practices. We will continue to foster a progressive culture with challenging, innovative and flexible work environment, including a strong emphasis on gender equality to succeed and grow. PTCL believes in team work, continuous well-being of the employees and serving the nation."

He lauded Employers' Federation of Pakistan (EFP) and International Labor Organization (ILO) for encouraging healthy competition amongst organizations through such awards. T

GLOBAL ICT, TELECOM & SATCOM EVENTS

05 - 08 December 2017

Bakutel
Baku, Azerbaijan

07 - 09 March 2018

Convergence India
New Delhi, India

09 - 10 April 2018

5G MENA
Dubai, UAE

14 - 16 January 2018

CABSAT
Dubai, UAE

12 - 15 March 2018

Satellite 2018
Washington DC, USA

09 - 11 April 2018

Future Cities Show
Dubai, UAE

21 - 24 January 2018

PTC
Honolulu, Hawaii, US

19 - 20 March 2018

Telecom World Asia
Bangkok, Thailand

15 April 2018

Seamless Awards
Dubai, UAE

13 - 15 February 2018

Meet ICT Bahrain & BITEX
Bahrain

21 - 22 March 2018

Telematics Conference MEA
Dubai, UAE

15 - 16 April 2018

Seamless
Dubai, UAE

26 Feb - 01 Mar 2018

GSMA Mobile World Congress
Barcelona, Spain

27 - 28 March 2018

WCSC
London, UK

16 - 19 April 2018

34th Space Symposium
Colorado, USA

06 - 08 March 2018

Capacity Middle East
Dubai, UAE

07 - 12 April 2018

NabShow
Las Vagas, US

27 - 28 April 2018

Comex Technology Week
Muscat, Oman

GLOBAL ICT, TELECOM & SATCOM EVENTS

01 - 03 May 2018

GISEC
Dubai, UAE

01 - 03 May 2018

IoTx
Dubai, UAE

09 - 10 May 2018

TV Connect
London, UK

14 - 15 May 2018

Milsatcom Asia Pacific
Singapore

15 - 17 May 2018

Critical Comms World
Dubai, UAE

16 - 18 May 2018

CCW
Hong Kong

21 - 24 May 2018

SCWS World
London

26 - 28 June 2018

CommunicAsia
Singapore

26 - 28 June 2018

ConnecTech Asia
Singapore

27 June 2018

Asia Communication Awards
Singapore

27 - 28 June 2018

Milsatcom
Arlington, USA

27 - 30 June 2018

GSMA MWC
Shanghai, China

13 - 18 September 2018

IBC
Amsterdam, Netherlands

17 - 18 September 2018

Telecoms World Middle East
Dubai, UAE

18 - 20 September 2018

5G Asia
Singapore

14 - 18 October 2018

GITEX Technology Week
Dubai, UAE

15 - 16 November 2018

M360 - MENA
Dubai, UAE

13 - 15 November 2018

Africa Com
Cape Town South Africa

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SUSTAINABILITY | INNOVATION | HAPPINESS

9 - 11 April 2018
Dubai World Trade Centre

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Showcasing the **Cities of the Future**

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- **Sessions & Panel Discussions**
- **Launch Revolutionary Products**
- **Company & City Presentations**
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- **Sustainability Tour**
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