

APSCC Monthly e-Newsletter

MARCH 2019

The **Asia-Pacific Satellite Communications Council (APSCC) e-Newsletter** is produced on a monthly basis as part of APSCC's information services for members and professionals in the satellite industry. Subscribe to the APSCC monthly newsletter and be updated with the latest satellite industry news as well as APSCC activities! To renew your subscription, please visit www.apscc.or.kr. To unsubscribe, send an email to info@apscc.or.kr with a title "Unsubscribe."

News in this issue has been collected from February 1 to February 28.

INSIDE APSCC

Mark Your Calendar for APSCC 2019 on Nov 19 – 21 in Bangkok, Thailand!

APSCC is pleased to announce that the APSCC 2019 Satellite Conference & Exhibition will be held in Bangkok, Thailand on 19th – 21st November 2019. For the first time held in November as Asia's must-attend executive event for the satellite and space industry, APSCC 2019 will incorporate industry veterans and new players through the 3-day of in-depth conference program to a broader audience. For more information please visit www.apsccsat.com

APSCC Industry Briefing @ConnectTech Asia

June 18, Satcomm Hall, Marina Bay Sands

APSCC will hold a Satellite Industry Briefing on 18th June at the ConnectTech Asia Satcomm hall. Open to all exhibitors and visitors at the Satcomm hall, APSCC will have this one day program focused on existing satellite trends, NewSpace in Asia and the WRC-19 campaign. Please join this interactive and energetic satellite program during ConnectTech Asia! www.connectechasia.com

SATELLITE BUSINESS

Kratos Demonstrates Fully Automated Roaming Capability between Diverse Satellites, Service Providers and Gateways

February 4, 2019 - Kratos RT Logic has successfully demonstrated the ability to roam among heterogeneous networks and optimize wideband satellite communications (SATCOM) with Enterprise Management and Control (M&C). Enterprise M&C improves the effectiveness of the DoD's critical SATCOM infrastructure by enhancing resilience and protecting access through path diversity, speeding resource allocation times and improving bandwidth efficiency. The prototype Enterprise M&C system was implemented in conjunction with a multi-band U.S. government satellite communication terminal and gateway equipment representative of current U.S. government infrastructure.

Speedcast Delivers Satellite Backhaul for Major US Mobile Carrier

February 5, 2019 - Speedcast announced that Globecom, Speedcast's recently completed acquisition, has finished in the development of a nationwide satellite backhaul network for a "Big Four" U.S. mobile carrier. The network supports the carrier's services in low-density markets and provides backup protection to primary terrestrial backhaul circuits in the event of cable cuts or a natural disaster. Network design, engineering and installation took place as the first phase of a managed services agreement, which also included maintenance, network operations, satellite capacity and integration into the carrier's backbone.

Neos Adds Viasat In-Flight Connectivity to its Fleet of Boeing 787 Dreamliners

February 5, 2019 - Neos announced that Viasat's high-quality in-flight connectivity service will be offered on Neos' fleet of Boeing 787 Dreamliner aircraft. Neos selected Viasat for its industry-leading satellite communications systems, which are widely-recognized for delivering high-value, premium in-flight internet performance-at-scale. To meet the growing broadband demands of its passengers, Neos will have access to Viasat's current satellite communications systems in North America to the Caribbean and tip of northern South America; over the Atlantic Ocean; in Europe, through its jointly-owned satellite; as well as the ViaSat-3 satellite constellation under development. In addition to tapping into Viasat's high-capacity communications satellite via the latest-generation Viasat in-flight internet equipment, Neos will also work

with Viasat on a customized portal, giving passengers an easy interface to connect to the onboard Wi-Fi system.

Newtec Partners with Paradigm to Host New High-Throughput Modem Board

February 6, 2019 - Newtec has partnered with satellite communications solution provider Paradigm, which has become the first company to host its Newtec Dialog® SMB3310 high-throughput modem board. The two-way, high-throughput SMB3310 satellite modem board is now successfully embedded into Paradigm's field-proven Paradigm Interface Module (PIM) terminal controller, which provides a common terminal interface for fixed and quick deploy terminals operating on all major satellite networks. Through the PIM, the Newtec SMB3310 can interoperate with on-the-pause and on-the-move satcom terminals for Government, Defense, Broadcast and Mobility markets. The PIM is renowned for being easy-to-use and working seamlessly with compliant antennas and has a long track record in integrating a range of terminals.

Gilat Demonstrates Exceptional Maritime Connectivity over Telesat's Phase 1 LEO Satellite

February 6, 2019 - Gilat Satellite Networks Ltd. announced the completion of a successful test with a tier-1 maritime service provider for maritime communication over Telesat's low earth orbit Phase 1 LEO satellite. This industry-first milestone exemplified exceptionally low latency and high bit-rate essential for multiple maritime applications. The remarkable performance with latency as low as 16 msec was achieved in the tier-1 maritime service provider's teleport in Northern Europe. The test was performed with Gilat's LEO modem and a one-meter small maritime Ka-band antenna, demonstrating direct real-time communication. Outstanding performance was achieved in testing video conferencing, over-the-top (OTT) video such as YouTube and massive data communication on a symmetric link.

Hughes Specialized Satellite Modems Power Beyond-Line-of-Sight Communications for Remotely Piloted Aircraft

February 7, 2019 - Hughes Network Systems, LLC announced the first shipments of its specialized, multiband HM400 SATCOM modems to General Atomics Aeronautical Systems, Inc. (GA-ASI), powering beyond-line-of-sight communications for their next-generation Remotely Piloted Aircraft (RPA) known as the MQ-9B SkyGuardian™. Hughes Defense HM400 is a specialized, software-defined multiband satellite modem to support the General Atomics Aeronautical Systems, Inc. SkyGuardian Remotely Piloted Aircraft. Customized to meet specific operational requirements, the specialized Hughes HM400 delivers enhanced satellite-based communications for remotely piloted aircraft, leveraging an open system architecture and software-definable modem and waveform technology for a best-in-class solution. Supporting both military and commercial satellite frequencies, the fully integrated and highly resilient solution opens up applications such as search and rescue or disaster response for Predator-variant aircraft.

NovelSat Introduces a Compact Multi-receiver for Satellite IP Data Hubs

February 11, 2019 - NovelSat, a world leader in satellite transmission technology, announced availability of their new Multi-Rx Satellite IP Demodulator, the NovelSat NS HUB4000. The NS HUB4000 is a multi-receiver satellite transmission IP unit designed for mobile backhauling and enterprise satellite data transmission network operators, who want to optimize their hub CAPEX and achieve high transfer rates for inbound data traffic. The NS-HUB4000 houses four internal Rx cards, each with 8 satellite receivers, packing up to 32 high-efficiency receivers into a single 1U rack-mounted unit. The compact NovelSat NS-HUB4000 is the ideal choice for Point-to-Multipoint satellite network data applications in which a single NS-HUB4000 hub unit can receive data at an aggregate inbound rate of up to 2Gbps. Each of the 32 NS-HUB4000 carriers can simultaneously receive at up to 120Msps per carrier, saving rack space and reducing equipment and operating expenses.

Comtech Awarded \$6.2 Million of Additional Funding from U.S. Army

February 12, 2019 - Comtech Telecommunications Corp. announced that during its second quarter of fiscal 2019, its Command & Control Technologies group, which is part of Comtech's Government Solutions segment, received additional funding of \$6.2 million on the previously announced three-year \$123.6 million contract that has subsequently been increased to \$124.2 million, to provide ongoing sustainment services for the AN/TSC-198A SNAP (Secret Internet Protocol Router (SIPR) and Non-classified Internet Protocol Router (NIPR) Access Point), Very Small Aperture Terminals (VSATs). SNAP terminals provide quick and mobile satellite communications capabilities to personnel in the field. The contract has been funded \$45.8 million to date.

Speedcast Brings Improved Connectivity to Outer Cook Islands

February 13, 2019 - Speedcast International Limited announced that it will replace the Cook Islands' existing international hub termination service with a new domestic hub for data, voice, domestic terrestrial television distribution and cellular backhaul. The hub replacement will improve connectivity services for residents of the Cook Islands' remote outer islands. Speedcast will deliver the service with Bluesky, a primary provider of telecommunications services in the Cook Islands. The Cook Islands is comprised of 15 individual islands spread over approximately 91 square miles in the South Pacific. With a new Newtec Dialog hub solution by Speedcast, Cook Islands residents on the outer islands will have significantly improved capability to connect to friends, family, health services and businesses on the main island, Rarotonga, and to the rest of the world. The new hub will also lay the framework for future network services, such as new and expanded cellular services like 3G and 4G.

Comtech EF Data Receives \$1.8 Million Delivery Order for Satellite Earth Station Equipment

February 14, 2019 - Comtech EF Data Corp., which is part of Comtech's Commercial Solutions segment, received a delivery order in support of the recently awarded contract from the US Naval Warfare Systems Command. This latest delivery order, against the \$59.0 million indefinite delivery/indefinite quantity ("IDIQ") contract, is for \$1.8 million. The delivery order specified Comtech EF Data's SLM-5650B Satellite Modems and firmware upgrades. The SLM-5650B Satellite Modem is Comtech EF Data's latest generation modem product targeted for critical government and military applications. The SLM-5650B leverages the heritage and feature set of the SLM-5650A modem. The SLM-5650B supports backwards compatibility/inter-operability for existing SLM-5650A networks while providing enhanced performance and an expanded feature set. The commercially available modems will support satellite communications and interoperability across the Navy's platforms and shore sites.

ST Engineering and DSO Set Up JV for Satellite Analytics and New Space Technologies

February 14, 2019 - Singapore Technologies Engineering Ltd electronics arm has signed an agreement with DSO National Laboratories (DSO) to set up a joint venture company (JVCo). ST Engineering's planned investment of US\$3m (about S\$4.1m) is for a 51% stake in the JVCo, with the remaining 49% to be held by DSO. The JVCo, to be named ST Engineering Geo-Insights Pte. Ltd., will leverage the strengths of its parent companies to offer analytics, information products and value-added services based on satellite imagery to address growing global demand for timely insights that enable better and faster business decisions. The JVCo also intends to tap on emerging new space technologies to pursue potential business opportunities for low cost small satellites, or smallsat constellation design, development, manufacturing and operation.

EU Maritime Safety Agency Awards Managed Connectivity Services Contract to SES

February 14, 2019 - SES Networks' managed services will boost connectivity for Remotely Piloted Aircraft Systems (RPAS) services of the European Maritime Safety Agency (EMSA) provided to EU Member States and Agencies. These maritime surveillance activities supported by SES Networks are aimed at improving maritime security and safety operations, as well as response to pollution caused by ships, oil and gas installations. The RPAS-driven missions will be carried out in the seas surrounding the European Union or the European Free Trade Association (EFTA) countries. To enable multiple Long Range Long Endurance RPAS operations for maritime surveillance operations of the member states' authorities, SES Networks will design and provide deployment and maintenance of SATCOM connectivity during the missions. The managed services will include secure end-to-end satellite and terrestrial links, satellite capacity and teleport infrastructure. Under the agreement, SES Networks will support EMSA's Beyond Radio Line-of-Sight (BRLOS) RPAS operations, as well as satellite internet services to distribute the RPAS data and enable end-users to remotely follow the mission.

Inmarsat Announces New Initiatives to Support Maritime, Ports and Logistics Start-ups

February 14, 2019 - Inmarsat has joined forces with two leading start-up programs, Rainmaking's Trade and Transport Impact (T&TI) and Bluetech Accelerator, to create initiatives that directly support start-ups focused on IoT and big data innovation in the maritime, ports and logistics supply chain. The programs will fund, support and mentor start-ups developing applications that aim to harness the power of IoT and big data to enhance safety, efficiency and sustainability. Inmarsat will collaborate with those start-ups to find a route to market via its global, high-speed satellite communications infrastructure that connects over 160,000 ships and yachts, as well as ports, road and rail networks across the world.

Satcom Global Upgrades Aura VSAT to iDirect Velocity Platform

February 18, 2019 - Satcom Global announced the successful migration of its Aura VSAT network to the iDirect Velocity platform, enabling customers of the high-speed Ku-band service to benefit from higher capacity per vessel, improved satellite network management, as well as the ability to fully capitalize on the coverage and additional capacity of primary network supplier, SES Networks. The Velocity platform equips the Aura network with advanced mobility capabilities, ensuring vessels using the VSAT service maintain a high-quality, uninterrupted IP session whilst crossing multiple spot beams within a short period of time. In addition, the platform boasts carrier class redundancy, supporting the reliability of the Aura network. The upgrade has significantly enhanced Aura VSAT coverage and capacity by providing access to an increased number of satellite wide beams, as well as global access to hundreds of spot beams on SES' three recently launched High Throughput Satellites (HTS). The addition of JCSAT-15 in the Indian Ocean region is key for connectivity across major shipping lanes linking Africa, Europe and Asia, while additional coverage provided by Astra 4A enhances existing multi-beam coverage over typically busy European waters. SES-1 and SES-10 now provide improved coverage across the Americas, with particular focus on the U.S. West Coast, Alaska, Panama and the Caribbean.

PSSI Global Services and Sydney Teleport Services Establish New Transmission Gateway

February 18, 2019 - PSSI Global Services and Sydney Teleport Services (STS) have collaborated to establish a gateway between PSSI International Teleport (PIT) in Pittsburgh, Pennsylvania, and the STS teleport in Sydney, Australia. This connection expands both companies' broadcast footprints to cover the U.S., Europe and Asia-Pacific regions. This new bidirectional connection means PSSI Global Services customers now have unique access to Asia-Pacific satellite fleets, as well as STS's expansive fiber network, which reaches from the U.S. to Australia and the U.K. Meanwhile, STS customers gain access to PIT's 50-plus antennas – which support transmissions throughout the Americas – and production services at the PSSI Pittsburgh Videotech Center.

Es'hailSat and BridgeSat Bring Laser Satellite Communications to the Middle East

February 19, 2019 - Es'hailSat, Qatar Satellite Company and BridgeSat announced a strategic relationship that will provide businesses and governments across the Middle East with affordable access to laser-based satellite broadband services. This is the latest milestone toward BridgeSat's goal of providing organizations worldwide with a faster, less expensive and most secure alternative to traditional radio frequency (RF) solutions for low earth orbit (LEO) and geostationary earth orbit (GEO) applications. BridgeSat owns and operates a growing global network of optical ground stations (OGS) and complimentary satellite terminals that provide high-bandwidth, high-security solutions for unique applications while complementing RF in hybrid networks. Es'hailSat owns and operates a growing number of Ka- and Ku-band satellites serving broadcasters, businesses and governments in the MENA region and beyond. Under the strategic relationship, BridgeSat will build its first OGS for the Middle East, which will be co-located at Es'hailSat's new satellite operations center in Doha, Qatar. The new OGS will support LEO and other satellite systems owned by Es'hailSat and other companies that are equipped with BridgeSat and other compatible space terminals.

Santander Teleport Supports Satellite Drift in Collaboration with RBC Signals

February 19, 2019 - Santander Teleport and RBC Signals have joined forces to provide ground segment services to reposition a geostationary satellite to a new orbital location. The maneuver will enable the satellite to find a new home after several weeks of controlled drift completed later this year. A 9-meter ground station operated by Santander Teleport is being used to telecommand the satellite and track its position, with the TT&C system being controlled remotely by the satellite operator. Once it reaches the farthest orbital location visible by the antenna, the control of the satellite will be handed over to another teleport to continue and complete the drift.

Comtech EF Data Awarded \$1.7 Million RF Equipment Order

February 20, 2019 - Comtech EF Data Corp. has been awarded a \$1.7 million RF equipment order from a leading satellite antenna manufacturer. The satellite antenna manufacturer, which provides full motion antenna solutions for marine and other mobility applications, will continue to team Comtech EF Data products with its innovative, full-motion antenna products to provide its marine customers with unparalleled performance and reliability. The order specified two models of Comtech EF Data's field-proven, robust and efficient LPOD Block Up Converters (BUCs); the 250 Watt C-Band model and the 125 Watt Ku-Band model. The LPOD BUCs will provide the antenna manufacturer's clients with the ability to

deliver the highest possible speeds with the utmost reliability in the most demanding marine environments, such as cruise, oil & gas and merchant shipping. The LPOD BUC product line provides advanced monitor and control features that enable real-time access to critical performance, and status information to ensure that system operators can manage and optimize networks to the highest possible standards.

CETel Secures Capacity on SES-12

February 20, 2019 - CETel, a leading German service provider of global managed end-to-end communications solutions, signed a substantial lease contract for satellite capacity with its strategic partner SES Networks. The capacity is secured on the recently launched satellite SES-12, which is one of the largest geostationary satellites that SES has ever procured. The satellite carries six wide beams and 72 high-throughput spotbeams serving regions from Middle East to the Asia-Pacific. The coverage reaches from Cyprus in the West to Japan in the East, and South to Australia and North to Russia. Its excellent coverage enables CETel to provide optimized solutions from its own communications hub located in the UAE. The customized services can be delivered via hub-based or hub-less technology according to the specific requirements of CETel's customers. Currently, CETel operates and manages more than 500 MHz on 15 satellites, as well as several O3b/MEO sites, delivering connectivity into more than 50 countries worldwide. Blending the powerful SES-12 capacity into the portfolio will result in even more efficient satellite communications solutions. The satellite is planned to become operational during Q1 2019.

Viasat and Facebook Collaborate to Expand Internet Connectivity in Rural Mexico

February 20, 2019 - Viasat and Facebook have announced a collaboration to accelerate the deployment of affordable, high-speed, high-quality internet to communities that lack reliable internet or have no connectivity at all. Viasat and Facebook are working together to make the internet accessible to more people in rural areas around the world. The collaboration will help accelerate the deployment of Viasat's market-leading satellite-enabled Community Wi-Fi hotspot service, which is an innovative, proven approach to bringing high-speed, affordable Wi-Fi directly to consumer's devices, where internet service was previously unavailable or ineffective. The Viasat service requires minimal local infrastructure, is highly-sustainable and rapidly scalable in emerging markets where large gaps exist among demand, affordability and availability of internet services. As part of this collaboration, Viasat will place high-speed satellite Wi-Fi hotspots – delivered as an affordable pre-paid service – at thousands of rural locations. Facebook is investing in the roll-out and working with Viasat to help identify optimal deployment locations within Viasat's current and planned satellite coverage.

Addvalue Makes a Watershed Breakthrough into Aviation Market

February 20, 2019 - Addvalue Technologies Ltd, a leading player in the mobile satellite communications industry, announced that its wholly-owned subsidiary, Addvalue Innovation Pte Ltd (Addvalue), has formalised a significant design contract with Avionica LLC (Avionica), a world leader in innovative, miniaturized aircraft data collection and wireless data transmission equipment, to jointly develop a new generation of Swift Broadband (SBB) terminals to support the growing demands for real-time flight data services for the worldwide aviation market. Under the Contract, Addvalue will develop the main components of the satellite connectivity while Avionica will develop the avionic components of the system and be responsible for the system integration and project management for the FAA certification process.

Wavestream Announces the First in a Series of Ka-band Solutions for LEO/MEO Gateway Market

February 20, 2019 - Wavestream, a world leader in the design and manufacture of next generation high-power solid-state amplifiers, announced the first in a series of Ka-band solutions for LEO/MEO gateway market. Wavestream has released an industry-leading Ka-band 160W Peak Envelope Power BUC for LEO/MEO gateway applications. The new BUC provides 65W of linear power. Leveraging Wavestream's patented Spatial advantEdge technology, this new gateway-focused BUC reaches power levels that could previously be achieved only by traveling wave tube amplifiers. Using the latest in GaN chips, Wavestream BUCs provide best-in-class performance with the smallest SWaP. The 160W BUC provides major technical and operational advantages for satellite operators with global LEO/MEO constellations.

Newtec Collaborates with Wind River on 5G Technology

February 22, 2019 - Newtec announced it is collaborating with Wind River to utilize the Wind River Titanium Cloud virtualization platform to develop a Newtec 5G solution based on the Newtec Dialog® multiservice platform. 3GPP has defined a service-based architecture where flexibility and dynamic

adjustments are the key drivers to meet performance and cost requirements. This architecture defines network functions which can be triggered by other services, leveraging virtualization and network slicing. Wind River's complete Network Functions Virtualization (NFV) software platform infrastructure will help Newtec Dialog leapfrog these 5G requirements. The Titanium Cloud platform delivers the features needed to successfully build and deploy a virtualized network running multiple Virtual Machines. Newtec has signed a joint statement with the European Space Agency (ESA) and a number of industrial companies to carry out trials to demonstrate the use of satellite communications capabilities integrated and interoperable in the 5G environment, achieve interoperability of networks and demonstrate the functionality, performance and benefits brought by the use of satellite. A first phase is leveraging existing space and ground segment assets and trialing the latest developments, including with newer LEO and MEO constellations.

Speedcast and Intellian Announce Strategic Alliance

February 24, 2019 - Speedcast International Limited announced that the company will begin to offer Intellian's v240MT antenna to its Cruise and Energy customers. The v240MT is Intellian's next generation, tri-band and multi-orbit 2.4 meter antenna for use on Ku, Ka and C-band satellites. The antenna will provide Medium Earth Orbit (MEO) and Geostationary Earth Orbit (GEO) broadband access to virtually any satellite constellation within seconds. These frequency-agile and orbit-agnostic capabilities are designed to future-proof the technology for customers seeking the fastest and most reliable broadband connectivity at sea. Innovative antenna technologies are in high demand in the Cruise and Energy sectors to support data-rich applications. The Intellian v240MT is specifically designed to deliver data rates exceeding 1Gbps, and will provide customers with seamless, high-speed connectivity, essentially giving guests and crew the same connectivity speeds they enjoy at home, while enabling the operator to remotely switch frequency bands or orbits to maximize the operational performance.

Thuraya and ITC Global Partner to Deliver New Market-leading Global Maritime VSAT Service

February 25, 2019 - Thuraya has partnered with ITC Global to set up Thuraya VSAT+ maritime satellite service. The partnership gives Thuraya access to Panasonic's global mobility network, which enables the Ku-band element of the Thuraya VSAT+ service. Thuraya – a company with 20+ years in satellite communications, including maritime – launched VSAT+ in Q4 2018. The service offers global coverage, best-in-class data rates to meet growing demand for high-throughput services, and high levels of reliability, security, resilience and flexibility. The partnership will enable new value-added solutions for the maritime industry through a network of Master Distributors and partners. They will bring VSAT+ to market and add value in areas such as comprehensive cyber security, ease of installation and 24x7 maintenance availability. The integrated offering makes VSAT+ a compelling proposition for maritime customers such as high-end fisheries, offshore installations and merchant fleets. Thuraya VSAT+ ensures optimum flexibility by combining Ku-band (for high-speed data) and L-band (for backup and fall back). The service is scalable to meet global and regional needs for essential communications such as voice calls, email and position reporting, and for high-bandwidth requirements such as training, publications, condition-based maintenance, enterprise resource planning and content for crew welfare.

Intelsat Introduces Mobile Reach Manage

February 25, 2019 - Intelsat has introduced Mobile Reach Manage, a new end-to-end managed service that enables Mobile Network Operators (MNOs) to quickly and cost effectively deploy their 2G/3G/4G network infrastructure into areas once considered unreachable. Mobile Reach Manage removes the cost, geographic hurdles and complexity faced by traditional backhaul solutions. It provides a high-performing, space-based cellular backhaul solution that offers MNOs an end-to-end connectivity service from any Radio Access Network (RAN) site to the MNO Core with a guaranteed Service Level Agreement (SLA). In addition, Mobile Reach Manage does not require MNOs to invest in any space or ground infrastructure. This enables MNOs to close their business case and make reliable, quality coverage available to more communities throughout the world. Mobile Reach Manage is anchored on industry-leading technology and redundancy, ensuring that MNOs will have seamless, consistent, on-demand connectivity whenever and wherever they need it. They will have access to Intelsat's globalized network, which reaches 99% of the world's populated areas. It consists of the Intelsat Epic^{NG} platform, which utilizes C- and Ku- band, wide beams, spot beams, and frequency reuse technology to provide a host of customer benefits. High-quality connectivity without loss in performance and up to 15x more throughput per satellite is a staple of what Intelsat Epic^{NG} can deliver.

Inmarsat and Microsoft Azure IoT Join Forces to Deliver Cloud Services via Satellite

February 25, 2019 - Inmarsat has entered into a collaboration agreement with Microsoft, which will enable Inmarsat's customers to transfer data collected through their Industrial IoT solutions to the Microsoft Azure IoT Central platform. Under the agreement, Microsoft Azure customers will also be able to access Inmarsat's global satellite communications network, enabling them to connect their IoT infrastructure to cloud-based applications via the world's most reliable mobile connectivity network. The collaboration will initially focus on the delivery of Industrial IoT-based solutions to the agriculture, mining, transportation and logistics sectors, supporting digitalisation and visibility across the global supply chain. Customers will gain access to a variety of tools that will help connect anything to anything, bringing together assets in the physical world with applications in the digital world, no matter how remote the location.

Orbit Unveils Newest Dual-band Maritime Satcom Solution

February 26, 2019 - Orbit Communication Systems unveiled its latest dual-band Ku/Ka terminal extending Orbit's multi-band maritime satellite communications solutions. Developed in close cooperation with SES Networks, Orbit's dual-band Ku/Ka terminal augments the existing dual-band C/Ka terminal, supporting a multi-band terminal product range. The expansion of the frequency ranges and flexibility of the OceanTRx terminal enables ease of switching between SES's multi-orbit Geostationary (GEO) and Medium Earth Orbit (MEO) satellites. Orbit's 2.2m (87") OceanTRx 7 Multiband C/Ka- and Ku/Ka-band stabilized maritime satcom terminals provide high-speed, cost-effective connectivity to Cruise vessels, offshore platforms, and Navy vessels, in even the most severe offshore conditions. This rugged and compact maritime terminal offers outstanding performance for its size, with the equivalent performance of a 2.4m dish contained within a small 2.7m radome footprint – significantly smaller and lighter than alternative systems. The OceanTRx terminal is fully tested and continues to set the standard for ease of integration in half a day. It is also small enough to come fully assembled in a standard 20-foot shipping container.

SES-12 Goes Operational to Serve Asia-Pacific and the Middle East

February 26, 2019 - SES announced that its newest satellite, SES-12, is now ready to serve its video, fixed data, mobility and government customers across Asia-Pacific and the Middle East. The powerful satellite, which is designed with state-of-the-art wide beams and high throughput beams, will join SES-8 at 95 degrees East. SES-12 is the latest satellite that SES has launched to that orbital position where it will operate under the authority of the Kingdom of the Netherlands. The all-electric satellite will replace and augment the services currently being provided on SES's NSS-6 satellite. SES-12 is SES's third hybrid satellite with both wide beams and high throughput payload. Like SES-14 and SES-15 which serve the Americas, the SES-12 high throughput payload is SES's solution for enhancing cost-effective connectivity solutions for aeronautical and maritime customers across Asia-Pacific and the Middle East. SES-12 will also be pivotal in enabling governments to provide connectivity programmes to bridge the digital divide, and in allowing telcos, mobile network operators and internet service providers to deliver reliable and enhanced cellular backhaul and faster broadband services. Together with SES-8, SES-12 will reach key direct-to-home neighbourhoods. The satellites will provide pay-TV operators the reliability and scalability to improve viewing experiences by enhancing their content offerings, including delivering higher-quality picture quality to address the audience's burgeoning demand for High Definition (HD) and Ultra HD content.

VT iDirect Enters Proof of Concept Testing for 5G Content Distribution Leveraging Edge Computing

February 26, 2019 - VT iDirect has completed a successful proof of concept testing for its OSMOSIS video content distribution technology designed to operate over a satellite network with 4G/5G and Multi-access Edge Computing (MEC) integration. OSMOSIS technology transforms multimedia streaming on mobile devices by leveraging efficiencies of a tightly integrated hybrid cellular and satellite network, enhancing user streaming experience and reducing network operation costs. The OSMOSIS proof of concept is demonstrated using the SATis5 testbed network showcasing 4G and 5G satellite-enabled user applications. Users will be able to experience multi-media content delivery to smartphones and laptops via satellite-connected base stations in an over-the-air live demo, while experiencing firsthand the benefits of multi-access content delivery and network edge caching.

Cobham SATCOM to Deliver Key L-band Ground Infrastructure Components for I-6 Satellites

February 26, 2019 - Cobham SATCOM will provide L-band ground infrastructure for Inmarsat's I-6 constellation, currently set for first launch in 2020. Cobham SATCOM's next generation radio access

network (RAN) leverages scalable technologies to deliver a more flexible, digital system, enabling Inmarsat customers to keep pace with market requirements. I-6 will be the world's most advanced L-band satellite constellation. The network will extend Inmarsat's market-leading L-band BGAN offering, delivering additional capacity while enabling future capabilities from advanced global safety services and low cost mobile solutions, to Internet of Things (IoT) applications and beyond. This initiative continues a 30-year plus partnership between Cobham SATCOM and Inmarsat extending across land, maritime, space, and aviation. In addition to producing market-leading user terminals in all categories, Cobham SATCOM has developed and maintained the L-band radio access network and constructed Inmarsat Land Earth Stations in 17 countries since 1990.

Goonhilly Partners with the Australian Space Agency to Drive New Opportunities Worldwide

February 26, 2019 - Satellite communications innovator and space gateway Goonhilly Earth Station has inked a partnership agreement with the Australian Space Agency to collaborate and create new opportunities in the space economy in Australia, the UK and beyond. The new statement of strategic intent and cooperation aims to help progress the Australian space sector and make the benefits of space more accessible for businesses, governments and institutions. One activity forming part of the agreement and already underway is Goonhilly's involvement in the proposed SmartSat CRC (co-operative research centre) space research initiative. This consortium aims to enhance connectivity, navigation and monitoring capability across Australia and to maximise the country's resources by solving major satellite system and advanced communications challenges. Another is Goonhilly's commitment to help develop Australian-based deep space communication assets. Goonhilly opened an office in Australia in 2018, run by industry veteran Bob Gough, and will invest further in infrastructure and facilities as part of its wider plan to support deep space projects globally.

MDA Aids Preservation of Indonesian Rainforest with its RADARSAT-2-powered Forest Alert Service

February 26, 2019 - MDA announced that its Forest Alert Service (FAS) space-based capabilities have enabled Asia Pulp & Paper's (APP) pulpwood suppliers to more strategically monitor forest cover loss in conservation areas and meet their commitment to stakeholders that conservation forest areas were not cleared in connection with the production of their products. In less than three years since MDA began providing the monitoring service, APP reports the losses of natural forest cover in their suppliers' forest concessions has dropped from between 5-6 percent to just 0.06 percent in the conservation area of more than 600,000 hectares, demonstrating APP's commitment to responsible forest management. The strategic partnership between APP and MDA launched in 2016, enabling APP's pulpwood suppliers to respond rapidly to detected forest changes. Monitoring land cover changes in production areas is essential for efficient operational planning and minimizes illegal encroachment, further protecting high-value forests. Employing MDA's RADARSAT-2 satellite, FAS provides near real-time space-borne services to deliver critical and timely information to APP, typically within two days of data collection. Every 24 days, the system monitors approximately 3.8 million hectares, which also comprises APP's pulpwood suppliers and the Giam Siak Kecil Biosphere Reserve. RADARSAT-2 penetrates clouds and precipitation to detect subtle forest disturbances, in an area as small as 0.5 hectares.

Hughes JUPITER System Selected by Speedcast to Power Cellular Backhaul and Enterprise Services across Central America

February 27, 2019 - Hughes Network Systems announced that Speedcast has chosen the Hughes JUPITER System to power cellular backhaul over satellite and enterprise VPN services for a leading mobile network operator in Managua, Nicaragua. The operator will employ a JUPITER Ku-Band hub and nearly 100 satellite terminals to expand its cellular 3G and 4G services in Nicaragua and throughout Central America, along with providing VPN services for enterprises to increase speed and security of critical business networks and grow new markets. Supporting a wide range of applications across all market sectors – consumer, enterprise, government and mobility – the industry-leading Hughes JUPITER System is the world's most widely deployed satellite broadband platform, currently serving more than 1.3 million subscribers in the Americas. With DVB-S2X technology built-in, JUPITER delivers more than 200 Mbps of TCP throughput per terminal and has been deployed by leading operators on both conventional and High-Throughput Satellites (HTS). For cellular backhaul applications, it includes 4G/LTE optimization that yields 30 to 60 percent bandwidth savings over conventional backhaul solutions.

Milbank Unveils New Global Branding and Name Change

February 27, 2019 - Global law firm Milbank, Tweed, Hadley & McCloy announced its new branding and legal name, Milbank LLP. This change coincides with the move of Milbank's headquarters from Wall Street to Hudson Yards, New York City's newest neighborhood and the largest private real estate development in US history. The new office space at Hudson Yards creates a world-class experience for attorneys and staff, with private space for focused work and social spaces for team collaboration that were custom-made to meet the specific needs of Milbank attorneys, including a restaurant and a food service ordering app, a coffee bar with made-to-order beverages, a private on-site health center in the building with digital scheduling assistance and two outdoor terraces. Sunlight-flooded offices, seamless indoor-outdoor transitions and expansive staircases throughout the building to connect the community were thoughtfully chosen to create a sense of inclusivity throughout the space. The new brand image combined with the modern, open and collaborative office space, more accurately reflect the culture of the firm.

OneWeb Announces First Two Client Agreements

February 27, 2019 - OneWeb, the global satellite-powered communications company with a mission to bring connectivity to everyone, everywhere, announces that it has secured its first customer contracts to deliver its high speed, low latency, global communications services. OneWeb has signed an agreement to provide Talia Limited, the market-leading teleport, satellite and network operator, with a fast, affordable service for the Quika platform to offer consumer broadband internet and community WiFi across a number of regions including Africa and the Middle East. OneWeb's next generation global satellite broadband service will come on stream for Talia starting in 2021, with virtually all of Talia's markets activated by 2023. Separately, OneWeb has contracted with Intermatica, global carrier and solution provider of broadband and VOIP telecommunications services for businesses in Europe. With OneWeb's global communications network, customers will take advantage of high speed, low latency broadband services which go beyond the limits of existing infrastructure - for example, to remote, rural communities and for businesses and industries that rely on global connectivity, such as Aviation, Maritime, Automotive, and Locomotives. With latency less than 50 milliseconds, OneWeb's customers will have service capable of meeting a range of emerging applications that require real-time communication and collaboration.

BROADCASTING

DishTV to Deploy Newtec Technology to Achieve Significant Efficiency Gains across Indian Market

February 1, 2019 - Newtec is providing its M6100 Broadcast Satellite Modulator to enhance efficiency on DishTV's Direct-to-Home (DTH) platform. DishTV is the largest DTH service provider in India and the world's largest single-country DTH company. The M6100 is part of a wider upgrade that will enable a next-generation viewing experience for its customers. The modulators will provide DishTV with significant cost efficiencies through better bandwidth utilization. DishTV has recently decided to upgrade and expand its entire headend platform with the global media technology leader MediaKind in order to meet rising demand for a more immersive TV experience. This enables the company to deliver both traditional and multi-screen services from a single platform to its 23.5 million subscriber base. Newtec's certified business partner Horizon Broadcast LLP will provide the Newtec modulators which will deliver advanced, future-proof technology to DishTV. Newtec has a long-term and trusted partnership with Horizon Broadcast and has provided its extensive range of equipment to DTH broadcasters in India, enabling them to maximize throughput in a country where bandwidth is limited.

RCN Launches New Ultra HD 4K Channels with SES

February 5, 2019 - RCN, an award-winning provider of high-speed internet, digital TV and phone services, has announced its commercial launch of Ultra HD services through a partnership with SES, the world's leading satellite operator. RCN is featuring seven dedicated 4K channels from the North American SES Ultra HD Platform, which will be available on RCN's Signature TV channel tier for new and existing customers. RCN's initial 4K launch will feature a broad range of Ultra HD channels, including Insight TV, Travelxp 4K, The Country Network, NASA TV UHD, C4K360, NatureVision TV, and UHD1, as well as special 4K live events coverage. To provide this selection, RCN is leveraging the content and reach of the SES Ultra HD platform, the world's largest single source of linear 4K programming. The SES Ultra HD Platform, supplying the linear 4K channels, will deliver the content over its satellite fleet, which has 100% cable penetration over the United States. The content is delivered seamlessly to subscribers without buffering or network congestion as can be the case with OTT 4K.

Discovery Deutschland Continues to Rely on SES's MX1 for Managed Playout Services and More

February 5, 2019 - SES has announced that Discovery Deutschland, a TV and Digital Media broadcast station based in Germany, has extended its partnership with MX1, SES's global provider of media services and solutions. Under the terms of the extension, MX1 will continue to fully manage playout and media asset management tasks for Discovery Deutschland's SD and HD channels. The channels include TLC, DMAX, Animal Planet, Discovery Channel, and Shop 300 in Germany, as well as DMAX Austria in SD in Austria. Additionally, the new channel TLC Austria has been distributed over SES's ASTRA 1N satellite since 1 January 2019 at its prime orbital location of 19.2° East, reaching over 118 million TV homes across Europe. Discovery Deutschland is using MX1 360, a unified media platform, to manage and deliver all linear and nonlinear content. Once the ready-to-air program files have been delivered by Discovery, MX1 360 brings together a full range of media services, enabling the broadcaster to manage and deliver their content from a single interface to any broadcast platform.

Ukraine's First 4k TV Channel Broadcast via Spacecom's AMOS-7

February 6, 2019 - Spacecom announced its AMOS-7 communication satellite is broadcasting the Ukraine's first ever 4K TV channel. Nashe Media Group's #NASHE HDR channel is being broadcast throughout the entire country by Ukrainian operator UkrKosmos. Following on the new channel's success, Nashe is planning a Spring 2019 launch of a second 4K channel, ETNO.

Eutelsat Partners with Ethiopian Broadcasters for Video Capacity on EUTELSAT 8 West B

February 12, 2019 - Eutelsat Communications has signed simultaneous multi-year contracts with the Ethiopian Broadcasting Corporation and the Association of Ethiopian Broadcasters for video capacity on its EUTELSAT 8 West B satellite. The aggregate of these contracts represents multi-transponder capacity, including incremental resources. Leveraging EUTELSAT 8 West B satellite's dedicated coverage of Ethiopia, both media groups will enjoy nationwide coverage for their free-to-air DTH platforms, representing a total of 30 channels. Introduced to the local market back in 2012, Eutelsat's 7/8° West orbital position will now broadcast the vast majority of Ethiopia's channels thanks to these new agreements. A longstanding client of Eutelsat on the HOTBIRD position, the Ethiopian Broadcasting Corporation (EBC) is the country's oldest and largest free-to-air broadcaster. Programming features news, sport, music and other entertainment, broadcast predominantly in Amharic, the official working language of the federal government. The Association of Ethiopian Broadcasters (AEB), established in September 2018, is a group of privately owned, licensed broadcasters operating in Ethiopia. Members include Ethiopian Broadcasting Service (EBS), Fana TV, Walta, Kana TV, Arts, Nahoo TV, Afrihealth, OBS, LTV, Ahadu, DWTV, Asham TV and Balageru.

TRT Arabi HD on Arabsat BADR-4 Free-To-Air DVB-S2 Platform

February 13, 2019 - Arabsat announced that the new TRT Arabi HD channels are available on the Arabsat BADR-4 DVB-S2 platform. TRT Arabi is an Arabic language channel from TRT (Turkish Radio and Television Corporation), broadcasting to Arabic-speaking audiences in Turkey and the Middle East, 24 hours-a-day, bringing news, documentaries as well as soap operas from Turkey across the region. Globecast is expanding its longstanding relationship with Arabsat, providing the technical broadcast solutions needed to launch the new HD service and to distribute TRT Arabi HD content to the Arab region on Arabsat's highly penetrated video neighborhood. Arabsat BADR-4, located at 26 East degrees, is the leading distribution and Direct-to-Home distribution platform serving the Arab region.

Eutelsat Selected by Afghanistan Broadcasting System to Provide Capacity for New DTH Platform

February 14, 2019 - Eutelsat Communications and Afghanistan Broadcasting System (ABS) have signed a multi-year, multi-transponder contract for video capacity on the EUTELSAT 53A satellite. ABS will use EUTELSAT 53A's Ku-band resources over Central Asia to provide nationwide coverage for the launch of its new DTH platform, Oqaab HD+. This platform will be enriched in the coming months to carry a mix of national and premium international channels. The capacity will also enable ABS to extend its DTT network from Kabul to all other Afghan provinces by feeding DTT network head-ends.

LAUNCH / SPACE

SSC Seals Launch Site Partnership with ArianeGroup

February 1, 2019 - The Shetland Space Centre (SSC) announces a major partnership with ArianeGroup.

The joint venture, equally owned by Airbus and Safran and lead contractor for Europe's Ariane 5 and Ariane 6 launchers, will define a concept of operations and assess the range of missions for the SSC spaceport project in the frame of a three-month study. The spaceport will be designed from the ground up to be a commercial facility operated by SSC. During a visit this summer ArianeGroup representatives acknowledged that Unst, Shetland's most northerly island, is a "perfect location in Northern Europe" to establish a spaceport for launching small satellites and supporting associated services such as data-linking and storage. Dialogue has been ongoing since then between the SSC and ArianeGroup experts for the development of the launch facility. Development of the launch facility will be subject to planning consent and a licence to operate in Unst.

Arianespace Orbits Two Telecommunications Satellites on First Ariane 5 Launch of 2019

February 5, 2019 - Arianespace has successfully orbited two telecommunications satellites: the Saudi Geostationary Satellite 1/Hellas Sat 4 comsat for operators KACST and Hellas Sat; and GSAT-31 for the Indian Space Research Organisation (ISRO). Arianespace's first launch of the year took place on February 5 from the Guiana Space Center (CSG), Europe's Spaceport in French Guiana. The Saudi Geostationary Satellite 1/Hellas Sat 4 (also called HS-4/SGS-1) satellite comprises two payloads, with coverage zones encompassing Europe, the Middle East and South Africa. With GSAT-31, ISRO continues to develop its space infrastructure to reduce the digital divide in India. The next ISRO geostationary satellite to be launched by Arianespace will be GSAT-30.

SSC and Goonhilly Earth Station Form Partnership to Co-develop New Space Capabilities

February 5, 2019 - Shetland Space Centre (SSC) and Goonhilly Earth Station have joined forces to develop rocket launch and tracking business capabilities for the burgeoning new space launch sector. The two companies have signed a Memorandum of Understanding (MoU) committing them to collaborate on a range of projects as the UK's space sector flourishes. Projects include working together to support both Shetland's and Cornwall's aspirations for both vertical and horizontal UK space launches. The firms will jointly promote and deliver launch, monitoring and tracking capabilities from the two sites at the extremities of the UK. SSC is planning to construct a commercial rocket launch centre on the island of Unst and is developing a teleport and other space-related ground infrastructure, while Goonhilly will invest in and install a new highly capable tracking antenna on Unst. The two firms will also co-develop data centres in both Unst and Cornwall.

Myriota Partners with Tyvak to Develop and Launch Next Generation Nanosatellites

February 6, 2019 - Myriota Pty Ltd has partnered with Tyvak Nano-Satellite Systems, Inc. to develop and launch multiple satellites in 2019, taking Myriota another step towards its goal of having a constellation of 50 nanosatellites. Each satellite will run Myriota's unique, patented software which provides reliable, direct-to-satellite Internet of Things (IoT) connectivity for millions of users worldwide. The partnership will leverage Tyvak's experience in satellite development, launch brokering and on-orbit operations, with Myriota selecting Tyvak from more than a dozen worldwide providers for its agile approach and capabilities, security, and mission assurance.

Spaceflight Signs Launch Services Agreement with Vector for Multiple Launches

February 6, 2019 - Spaceflight has signed a definitive Launch Services Agreement (LSA) with Vector, a leading microsatellite launch company. The LSA is for a 2019 launch with multiple priced options for future launches, leveraging the Vector-R launch vehicle. Vector and Spaceflight are also working towards a unique integration agreement that leverages Spaceflight's state-of-the-art integration facility in Auburn, Wash., its proven processes, and experienced mission management and engineering teams. Under the terms of the agreement, Spaceflight will receive the entire Vector-R fairing at its facility in Auburn, Wash., conduct all the integration services for its rideshare customers, and then ship the fully integrated fairing to the launch site. This integration approach, coupled with Vector's mobile launch system, enables a significant reduction in the time from when a customer spacecraft is received at the integration facility to when it is actually launched. The new contract comes on the heels of Spaceflight's agreement to launch Brazil's INPE Amazonia-1 spacecraft, which represents the company's largest rideshare satellite to date, and its historic dedicated rideshare launch of 64 smallsats on its SSO-A mission aboard a SpaceX Falcon 9 in December 2018. With the success of SSO-A, Spaceflight has now launched more than 210 satellites since its founding in 2011. In addition, the company is contracted to launch nearly 100 satellites in 2019 from a variety of launch vehicles including Falcon 9, PSLV, Antares, Electron, and Vega.

Orbex's Maiden Launch to Demonstrate First End to End UK Launch Capability

February 7, 2019 - Orbex announced that it is partnering with UK-based Surrey Satellite Technology Ltd. (SSTL) to carry an experimental payload on its maiden flight from Scotland in 2021. The first launch of the Orbex Prime rocket will represent a first for the UK space industry, showcasing the UK's end to end satellite launch capability, combining a UK rocket, a UK satellite and a UK launch site. This follows the announcement in July 2018 of the proposed UK Vertical Launch spaceport in Sutherland in the Scottish Highlands. At that time, the UK Space Agency announced that Orbex had been chosen to launch orbital vehicles from the site as part of the main consortium. Orbex has also confirmed that it will launch an upcoming satellite in SSTL's line of demonstrators by 2023. The Orbex Prime vehicle is a completely re-thought and re-engineered rocket, designed to deliver small satellites into Earth's orbit. Thanks to its novel architecture, Prime launchers are up to 30% lighter and 20% more efficient than any other vehicle in the small launcher category, packing more power per cubic litre than many heavy launchers. This is in part due to its unique choice of bio-propane as a fuel, a clean-burning, renewable fuel that cuts carbon emissions by 90% compared to old-fashioned hydrocarbon fuels. The Prime vehicle will launch satellites to altitudes up to 1,250 km (776 miles), inserting them into sun-synchronous or polar orbits.

Orbex to Launch Nanosatellites for Planet-wide IoT Network

February 7, 2019 - A UK-based spaceflight company Orbex has announced that Swiss-based Astrocast has selected Orbex to launch as many as 10 nanosatellites by 2023 in support of its global Internet of Things (IoT) network. Astrocast is building a 64 CubeSat IoT network to deliver affordable data communication services to the world's most remote areas. Designed specifically for IoT, Astrocast's two-way system allows companies to monitor and control their remote assets, including over-the-air upgrades at lower latency and cost than existing satellite communications networks. This capability has a multitude of applications across many industry sectors including environmental monitoring, security, maritime, mining, oil & gas and back-up. Astrocast's system employs multilevel AES 256 encryption making bringing a new level of security to IoT. This partnership underscores that attractiveness of the UK's satellite launch capability. Orbex's orbital launch vehicle, called Prime, will deliver small satellites into Earth's orbit from the proposed Sutherland spaceport in Scotland, as part of the main consortium. It is built upon a unique architecture that's 30% lighter and 20% more efficient than any other vehicle in the small launcher category.

Airbus and JSAT Sign Cooperation Agreement for the Third SpaceDataHighway Node

February 8, 2019 - Airbus and SKY Perfect JSAT have signed a cooperation agreement for the design preparation of the EDRS-D node. This third communication node of the SpaceDataHighway system is to be positioned over the Asia-Pacific region before 2025. EDRS-D will lead to a significant increase in the system's communication capacity and considerably expand its coverage. This agreement concerns the co-financing of design and development studies for the satellite payload, as well as of the system as a whole, in addition to the marketing of the SpaceDataHighway service by SKY Perfect JSAT in Japan. With this agreement, the total amount of the investment in the extension of the SpaceDataHighway stands at nearly € 15 million. The future EDRS-D payload will consist of three next-generation laser communication terminals (LCT) to allow simultaneous communication with several satellites, as well as aircraft and UAVs. These laser terminals will have broader bandwidth, bi-directional and interoperable communication capability with Japanese laser terminals. Thus, enabling a greater range for geo-geo crosslinks with another geostationary SpaceDataHighway satellites at a distance of up to 75,000 km. This will offer near real-time relaying of data from the other side of the world. The SpaceDataHighway is the world's first 'optical fibre' network in the sky based on cutting-edge laser technology. It will be a unique system of geostationary satellites permanently fixed over a network of ground stations, with the first – EDRS-A – already in space. Each day, it can relay up to 40 terabytes of data acquired by observation satellites, UAVs and manned aircraft, at a rate of 1.8 Gbit/s.

Airbus and Hisdesat Successfully Processed the First TerraSAR-X / PAZ Radar Interferogram

February 11, 2019 - Airbus Defence and Space and Hisdesat Servicios Estratégicos, S.A. have generated the first joint TerraSAR-X / PAZ Radar Interferogram. This milestone demonstrates the missions' capacity for cross-sensor interferometry, whose processing is among the most challenging. Interferograms are typically used to derive the topographic elevation and deformation of the Earth's surface, and are created using at least two different images acquired at different date. This flattened Cross-Sensor-Interferogram has been created from a mixed image pair with 4 days temporal separation acquired by TerraSAR-X and PAZ (StripMap scenes from 22 and 26 November 2018). The area covers the oil and gas production site

Burgan (Kuwait) and parts of the Persian Gulf. The oil field is the world largest sandstone oil field with the total surface area of about 1,000 km². As PAZ is positioned in the same orbit as TerraSAR-X and TanDEM-X and features exactly identical ground swaths and acquisition modes, they all three form a high-resolution SAR satellite constellation, jointly exploited by Hisdesat and Airbus. With the launch of PAZ, the observation repeat cycle has been divided by half, which improves the monitoring of fast ground deformation phenomena that can endanger lives and infrastructures.

China Improves Long March-6 Rocket for Growing Commercial Launches

February 11, 2019 - China announced that it is developing the modified version of the Long March-6 rocket with four additional solid boosters to increase its carrying capacity. The improved medium-left carrier rocket will be sent into space by 2020, according to the Shanghai Academy of Spaceflight Technology under the China Aerospace Science and Technology Corporation (CASTC), which designed the rocket. With a short launch preparation cycle, the Long March-6 has been mainly used for the academy's commercial launches. The rocket completed two space tests in September 2015 and November 2017, carrying 20 satellites and three satellites, respectively. The three-stage rocket is 29.3 meters long, with a launch weight of 103 tonnes. It has a carrying capacity of one tonne for sun-synchronous orbit. Fueled by a liquid propellant made of liquid oxygen and kerosene, the Long March-6 is China's first carrier rocket that uses non-toxic and non-polluting fuel. In January, the China Great Wall Industry Corporation, affiliated with the CASTC, signed a multiple launch services agreement with Satellogic to use the Long March-6 and the Long March-2 rockets to launch 90 satellites for a private Argentine company in the coming years. The first 13 satellites will be delivered later this year. It will be the first time for the Long March-6 to provide launch services for an international user.

Arianespace to Launch Satellite Deployment Solution from Open Cosmos

February 12, 2019 - Arianespace and Open Cosmos, a company providing turnkey space missions, announced that they have signed a contract for the launch of an innovative CubeSat deployment solution. Launched from the Guiana Space Center in French Guiana using a Soyuz rocket, the CubeSat deployment platform is a key to the commercial offering from Open Cosmos. The first mission comprises an array of CubeSats with a total capacity of 12 units (12U). It will weigh about 30 kg. at liftoff, and the CubeSats will be injected into Sun-synchronous orbit at an altitude over 500 km. Open Cosmos delivers effective satellite-based solutions with the goal of enabling companies to use space technologies for tackling global challenge. It specializes in the development and implementation of missions for small, low-cost satellites (up to 50 kg.), with short lead times (typically less than a year). One of the primary advantages of Open Cosmos is that it gives customers access to a wide range of launchers and orbits. The first Open Cosmos payload will be an auxiliary passenger on the COSMO-SkyMed Second Generation (CSG 1) satellite mission, along with the CHEOPS satellite for the European Space Agency ESA as well as the ANGELS and EyeSat's French CNES space agency missions. Launch is scheduled for the last quarter of 2019.

C-CORE Signs Contract with Airbus to Build Satellite Technology for ESA Biomass Project

February 12, 2019 - A multi-national effort with partners in Canada, Luxembourg, Italy and Ireland will work together to develop a calibration transponder in St. John's, Newfoundland & Labrador, Canada, for the European Space Agency's (ESA's) Biomass Mission. ESA has contracted Airbus Defence and Space to lead the satellite development, while C-CORE has been subcontracted by Airbus to design, develop, build and install the Biomass transponder. The total value of the contract is \$9.6M CAD. The Biomass Mission addresses one of the most fundamental components in the Earth system: the status and dynamics of tropical forests. 80 percent of the world's biomass is located in the tropical forests. The Biomass project will measure carbon stored in our planet's forests and its evolution over time. The calibration transponder, measuring over 8 meters in diameter, will receive signals from the satellite and transmit a reference signal to ensure the accurate calibration of onboard sensors. This information will help improve current assessments and future projections of the earth's carbon cycle. C-CORE was chosen to lead the calibration transponder project building on the success of similar projects. It will be built at C-CORE's facility in St. John's, NL and installed at a remote location specially selected to meet the mission needs.

LeoStella Inaugurates State-of-the-Art Smallsat Production Facility

February 15, 2019 - LeoStella announced the official inauguration of its production facilities in Tukwila, Wash. The company is a joint venture between Thales Alenia Space, joint venture between Thales (67 %) and Leonardo (33 %), and Seattle-based Spaceflight Industries. Formed in March 2018, LeoStella has been developing a state-of-the-art production facility to construct smallsats cost-effectively and at scale. The

first satellite produced by LeoStella will be an Earth-observation satellite for BlackSky's constellation. It is scheduled to be completed by the end of Q1 in 2019. The company is contracted to manufacture the next 20 satellites in BlackSky's constellation. When operating at capacity, LeoStella's production facilities will enable the company to produce up to 30 satellites a year, ranging from Earth-observation and telecom satellites. Additionally, LeoStella has spent the last year selecting its suppliers and forming partnerships with key vendors.

US Air Force Awards Launch Service Contracts to SpaceX and ULA

February 19, 2019 - The United States Air Force's Space and Missile Systems Center (SMC), in partnership with the National Reconnaissance Office (NRO), awarded two Evolved Expendable Launch Vehicle (EELV) launch service contracts. Space Exploration Technologies Corporation (SpaceX) has been awarded a \$297 million firm-fixed-price contract, for launch services to deliver AFSPC-44, NROL-85, and NROL-87 to the intended orbit. United Launch Alliance (ULA) has been awarded a \$441.76 million firm-fixed-price contract, for launch services to deliver SBIRS GEO-5, SBIRS GEO-6, and SILENTBARKER to the intended orbit. Both contracts provide the U.S. Government with a total launch solution for these missions, which includes launch vehicle production, mission integration, launch operations, and spaceflight certification.

SpaceX Launches Indonesian High-Throughput Satellite

February 22, 2019 - SpaceX's second mission of the year has launched the Nusantara Satu, also known as PSN 6, satellite into geostationary transfer orbit. Along with the primary payload were two secondary payloads organised by rideshare service provider Spaceflight, including the Beresheet lunar lander from Israeli non-profit firm SpaceIL. The mission, powered by a Falcon-9 rocket, lifted off from the Space Launch Complex 40 at the Cape Canaveral Air Force Station in Florida. The primary payload on the mission was the PSN-6 satellite, supplied in a turnkey contract that included the launch by Maxar Technologies' SSL, for Indonesian satellite operator PT Pasiik Satelit Nusantara. The 4,735-kilogram satellite was built on the popular SSL 1300 satellite bus and features 26 C-band, 12 extended C-band and 8 Ku-band spot beam transponders. PSN-6 is designed to provide service throughout Southeast Asia and includes a high throughput satellite payload for service in Indonesia. It is the first HTS node owned by a private Indonesian firm.

Thales Alenia Space to Provide Key Communication Equipment to NASA Missions

February 25, 2019 - The National Aeronautics and Space Administration (NASA) Goddard Space Flight Center (GSFC) has awarded Thales Alenia Space two contracts concerning the delivery of the Transponders and the Travelling Wave Tube Amplifiers for the Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) and Wide Field InfraRed Survey Telescope (WFIRST) missions. PACE is a strategic continuity mission, sponsored by NASA's Earth Science Division, responding to the challenge of climate and environmental change. Planned for a launch in 2022-2023, the PACE satellite will be capable of collecting radiometric and polarimetric measurements of the ocean and atmosphere, from which ocean ecological, ocean biogeochemical, cloud and aerosol particle data will be determined. The PACE observatory is comprised of three instruments: the Ocean Color Instrument (OCI) and two Polarimeters (HARP2 and SPEXOne). It is planned for launch into a Sun synchronous polar orbit at 676.5 km altitude. WFIRST is a NASA strategic mission rated as the top-priority large-scale project in the "New Worlds, New Horizons in Astronomy and Astrophysics". The WFIRST observatory is designed to settle essential questions in the areas of dark energy research, exoplanets detection and infrared astrophysics.

Arianespace Successfully Performs the First of 21 Launches for the OneWeb Constellation

February 27, 2019 - Arianespace's second launch of the year took place on Wednesday, February 27, at 6:37 p.m., (Kourou time) from the Guiana Space Center (CSG), Europe's spaceport in French Guiana (South America). By operating this maiden flight, the first of 21 launches contracted by OneWeb in 2015, Arianespace contributes to the fulfilment of its customer's ultimate ambition: providing Internet access to everyone, everywhere. The maiden mission for OneWeb brought the number of constellation satellites orbited by Arianespace to 109, which demonstrates a remarkable ability to meet the needs of this market segment with its current and future family of launchers. OneWeb's mission is to deliver global communications through a next-generation satellite constellation that brings seamless connectivity to everyone, everywhere. Placed in low-Earth orbit at an altitude of 1,000 km., the constellation will provide high-speed, low latency services to a wide range of markets, including aviation, maritime, backhaul services, community Wi-Fi, emergency response services and more, delivering high-speed access around the world – by air, sea and land. OneWeb's initial constellation will be composed of approximately 650

satellites and could expand to more than 900 as it grows to meet demand around the world. Commercial services are scheduled to begin in 2021.

India's PSLV-C45 to Launch Two NanoAvionics Nano-satellites

February 27, 2019 - NanoAvionics announces the upcoming launch of two orbital missions based on its M6P nano-satellite bus. The nano-satellite manufacturer and mission integrator uses innovative approaches to technology and business, that makes a new generation of space applications possible. The launch of these nano-satellites will demonstrate how NanoAvionics enables a faster, more responsive approach to space technology development. Among the features of the M6P bus is a pre-integrated design that shortens development cycles. In addition, NanoAvionics' ridesharing program lets several customers conduct technology demonstration missions at a fraction of the time and cost of a dedicated space mission. The first satellite, "BlueWalker 1," is the first of a series of satellites for AST & Science, to be used for testing the company's patented technologies in space. The two companies are partnering to take advantage of NanoAvionics' best-in-class buses, power systems, and services for this and subsequent AST & Science missions in the coming months. The second nano-satellite "M6P" is a ride-share mission which will host payloads from two Internet of Things (IoT) communications companies. SpaceWorks Orbital and Lacuna Space are each developing satellite-based communications systems for a new generation of low-power IoT devices.

D-Orbit Signs Contract for Launch and Deployment Services with Planet Labs

February 27, 2019 - D-Orbit, an Italian service provider for the New Space sector, signed a contract with Planet, a US-based private Earth imaging company, for the launch and deployment of six Dove-series satellites. Under the contract, D-Orbit will launch and deploy the satellites during the first commercial mission of ION CubeSat Carrier, the core technology of the InOrbit NOW launch service offered by the Italian company. The mission will launch in August 2019, on the Vega launch vehicle as part of the Small Spacecraft Mission Service (SSMS) Proof of Concept flight (POC flight). The ION CubeSat Carrier, a satellite platform developed and operated by D-Orbit, is a free-flyer dispenser able to host a combination of CubeSats ranging in size from 1U to 12U+ (and soon 16U as well) for a combined volume of 48U. Once in orbit, the CubeSat carrier deploys each individual spacecraft in an individual orbital slot, with orientation and impulse specified by the client. This feature enables a faster dispersion of a batch of satellite within an orbital plane, reducing the phasing time of up to 80%. Planet will test the ION's accelerated phasing capabilities on this upcoming mission, reducing the need to perform as many differential drag maneuvers to get the individual satellites into their orbital slots.

DDC's Single Board Computer Successfully Deployed on JAXA's GOSAT-2 Mission

February 28, 2019 - Data Device Corporation (DDC) announces another successful flight of its SCS750® Single Board Computer (SBC) on the Second Greenhouse Gases Observing Satellite (GOSAT-2). Mitsubishi Heavy Industries, Ltd. and JAXA successfully launched H-IIA Launch Vehicle No. 40 (H-IIA F40,) which encapsulates the GOSAT-2 satellite, on October 29, 2018 from the JAXA Tanegashima Space Center. The launch and flight of H-IIA F40 proceeded as planned. As of late October, the satellite had completed the Critical Operations phase, and moved into its Operational Phase and has been operating successfully since then. DDC provided a subcontractor to JAXA, Harris Corporation of Fort Wayne IN, with two flight SBCs for one of the key environmental sensor instruments on the satellite. Harris-built the TANSO-FTS-2 (Thermal and Near Infrared Sensor for Carbon Observation-Fourier Transform Spectrometer-2) that will measure greenhouse gases in the atmosphere. The instrument will collect high-spectral resolution data of the Earth in five bands, which enables measurement during daylight and darkness. The instrument's unique intelligent pointing system identifies, in real time, cloud-free areas of the atmosphere, greatly increasing the amount of useable data.

EXECUTIVE MOVES

Iridium Names Suzi McBride as New COO

February 1, 2019 - Iridium Communications announced that COO Scott Smith has decided to retire effective March 15th. Smith led Iridium's technology and operations, including Iridium NEXT, which recently completed its final launch. Smith will continue to work with Iridium in a consulting role as the handoff to his successor is completed, with the company wishing him well in his greatly earned retirement. In conjunction with this announcement, the company is welcoming back to Iridium new Chief Operations

Officer Suzi McBride. McBride will assume this position effective as of February 11, 2019. Smith first joined Iridium in April of 2010 with a primary goal of helping lead the company into the Iridium NEXT era.

SES Strengthens Leadership Team and Enhances Customer Experience

February 5, 2019 - SES is streamlining customer support and services by forming a global services delivery team under the leadership of a Chief Services Officer (CSO). This underscores SES's commitment to place customers at the heart of its business and deliver exceptional customer experience following the successful implementation of two market-facing business units in 2017, SES Video and SES Networks. The newly created CSO position consolidates all customer support and operational delivery, logistics and services related resources across the video and data businesses. It unifies functions across the organisation into a single team charged with delivering exceptional services to its customers. John Baughn, formerly Executive Vice President Global Services at SES Networks, is appointed to this newly created position. Furthermore, the company is pleased to announce Ruy Pinto as the successor to Martin Halliwell as Chief Technology Officer (CTO). Ruy Pinto, formerly Deputy Chief Technology Officer and Chief Information Officer of SES will lead SES's global technology organisation including all technology functions currently within the business units and will also retain the leadership of SES's IT and Digital Transformation activities. Martin Halliwell will remain part of the Senior Leadership Team and serve as a Strategic Advisor to the CEO until his planned retirement in May 2019.

Alex Fox Joins HawkEye 360 as EVP of Business Development, Sales and Marketing

February 7, 2019 - HawkEye 360 Inc. announced that Alex Fox has joined the company as executive vice president of business development, sales and marketing. Fox brings more than 20 years of executive leadership in engineering, operations and business development, with a focus on innovative space technology. Fox seeks to deliver value to customers through disruptive technology that fundamentally changes how customers solve problems. Prior to joining HawkEye 360, Fox was director of Space ISR Solutions for Harris Corporation, where he led new business efforts within Harris' Space and Intelligence business segment serving intelligence, defense, civil and commercial organizations. He has held executive business development, operations and engineering positions at IBM, DigitalGlobe, TASC, Northrop Grumman, GeoEye and Orbital Sciences.

Datapath Appoints Chris Lowe as Sales Director for Australia and New Zealand

February 12, 2019 - DataPath, Inc. announced the appointment of Chris Lowe of Brisbane, Queensland, Australia, to the position of sales director for Australia and New Zealand. Lowe will have overall responsibility for sales and customer development for the company's satellite and wireless communications products, systems and secure communications software. He will report to Carsten Drachmann, DataPath's Chief Sales and Marketing Officer. Lowe comes to DataPath after service as a senior executive at Telstra where he served as the Director, Federal Government. He led major billion dollar governmental Digital and ICT (Information and Communications Technology) transformation programs for Australia's Department of Human Services and the Department of Foreign Affairs and Trade. Before joining Telstra, Chris was employed by Aussat (now Optus), and GEC Marconi where he worked on European NATO projects before immigrating to Australia to take up an engineering role with NASA.

REPORTS

Satellite Flat Panel Antennas: An \$11 Billion Opportunity by 2028

February 4, 2019 - NSR's *Flat Panel Satellite Antennas, 4th Edition (FPA4)* report forecasts cumulative FPA equipment sales to reach approx. \$11 billion by 2028. NSR's FPA4 finds aeronautical equipment will drive revenue growth for manufacturers, while fixed broadband applications on Non-GEO satellites will be the main volume market. Flat panel antennas have long been a niche alternative to parabolic systems, due to high costs and variable performance limiting market potential. However, with Non-GEO satellite constellations from OneWeb, SES, SpaceX, Telesat, and others, expected to come online after 2020, the industry has begun taking a strong interest in FPAs.

NSR Releases VSAT and Broadband Satellite Markets, 17th Edition

February 7, 2019 - NSR's *VSAT and Broadband Satellite Markets, 17th Edition (VBSM17)* is the longest-running industry analysis of the fixed broadband satellite sector. In this time of profound transformation, NSR's unbiased approach and years of experience assessing the market gives VSAT and Broadband

Satellite Markets, 17th Edition (VBSM17) a unique ability to help shape the vision of the Fixed VSAT and Consumer Broadband markets. This unbiased report, which builds upon market needs that include application requirements, traffic trends, cost structures and other market-driven elements, serves as an opportunity roadmap for future strategic decisions.

UPCOMING EVENTS

ABU Digital Broadcasting Symposium, March 4-7, Kuala Lumpur, Malaysia, <http://dbs.abu.org.my>

The ABU Digital Broadcasting Symposium turns 15 in 2019 – a milestone that marks years of steady growth since its launch in 2005. From modest beginnings, DBS has become one of the region’s leading events for the broadcasting industry. Held annually in Kuala Lumpur, and organised by the ABU, it now attracts more than 1,000 participants. Comprising a conference, an exhibition, masterclasses and workshops, the symposium is designed to provide broadcasters with the information needed to make the right decisions in the rapidly-changing digital age. When DBS began 15 years ago, many Asian broadcasters had not yet gone digital. Many have now made the transition, or are in the process of doing so. At the same time, an ever-growing range of digital technologies is becoming available, offering exciting new opportunities – and challenging decisions – for broadcasters. DBS aims to help them stay ahead of the curve.

CABSAT 2019, March 12-14, Dubai, UAE, <https://www.cabsat.com/>

Taking place in Dubai across 3 days, over 13,000 people will converge on DWTC to attend the foremost annual event in the broadcast, satellite, content creation, production, distribution & digital media sector. Don’t miss out, ensure you’ve got CABSAT 2019 firmly booked in your calendar!

GVF Satellite Hub Summit @ CABSAT 2019 March 12-14, Dubai, UAE,
<https://www.cabsat.com/features/gvf-satellite-hub-summit>

Global Space Congress (GSC) 2019, March 19-21, Abu Dhabi, UAE,
<https://www.globalspacecongress.com/events/global-space-congress-2019/event-summary-ae6d3a25a75a4cb88ea19b02560959fa.aspx>

Global Conference on Space for Emerging Countries (GLEC 2019), April 24-26, Marrakesh, Morocco,
<http://www.iafastro.org/events/global-series-conferences/>

Satellite 2019, May 6-9, Washington DC, USA, www.satshow.com

Space Tech Expo 2019, May 20-22, Pasadena, CA, USA, <http://www.spacetecheexpo.com/>

Australasia Satellite Forum 2019, May 21-22, Sydney, Australia,
<http://www.talksatellite.com/asf2019flyer.html>

Satellite Industry Forum 2019, June 17, Singapore, <https://asiavia.org/events/sif-2019/>

ConnecTechAsia2019 Summit, June 18-20, Singapore, <https://www.connectechasia.com/the-summit>
ConnecTechAsia2019 Summit is the preferred conference in Asia for innovative sessions by technology’s rising stars and thought-provoking conversations with fellow industry peers. This is your chance to be part of a connected ecosystem – think three packed days of inspiring keynotes, focused tracks and engagement sessions with decision makers, sectoral stakeholders and digital communities. A supercharged arena powered by strong thought leadership, the Summit is inspired by innovators and enablers, tech superstars and leading organisations at the forefront of digital disruption. Reimagine the entire business value chain and help shape tomorrow’s digital societies at ConnecTechAsia2019 Summit! Register now!

Industry Briefing @ ConnecTechAsia 2019, June 18, Singapore, <https://www.connectechasia.com/>

Satellite Track @ ConnecTechAsia 2019 Summit, June 19, Singapore,
<https://www.connectechasia.com/>

Small Satellite Conference: Small Satellites – Big Data, August 3-8, Logan, Utah, USA,
<http://www.smallsat.org/>

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About APSCC

APSCC is a non-profit, international organization representing all sectors of satellite and space-related industries. The aim of the organization is to exchange views and ideas on satellite technologies, systems, policies and outer space activities in general along with satellite communications including broadcasting for the betterment of the Asia-Pacific region. Conferences, forums, workshops, and exhibitions are organized through regional coordination with its members in order to promote new services and businesses via satellite as well as outer space activities. APSCC membership is open to any government body, public or private organization, association, or corporation that is involved in satellite services, risk management or associate fields such as data-casting, informatics, multi-media, telecommunications and other outer-space related activities with interests in the Asia-Pacific region. More information is available at www.apscc.or.kr.