

APSCC Monthly e-Newsletter

November 2020

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.apsc.or.kr. To unsubscribe, send an email to info@apsc.or.kr with a title "Unsubscribe."

News in this issue has been collected from October 1 to October 31.

INSIDE APSCC

APSCC 2020 Conference Series Season 2: LIVE Every Wednesday 9AM HK I Singapore Time

APSCC 2020 is the largest annual event of the Asia Pacific satellite community, which incorporates industry veterans, local players as well as new players into a single platform in order to reach out to a wide-ranging audience. Organized by the Asia Pacific Satellite Communications Council (APSCC), APSCC 2020 this year is even stretching further by going virtual and live. Every Wednesday mornings at 9 AM Hong Kong and Singapore time, new installments in APSCC 2020 will be presented live - in keynote speeches, panel discussions, and in presentations followed by Q&A format. Topics will range across a selection of issues the industry is currently grappling with globally, as well as in the Asia-Pacific region. Register now and get access to the complete APSCC 2020 Series with a single password. To register go to <https://apscsat.com>.

SATELLITE BUSINESS

Kacific Plans Second Satellite: Kacific2

October 30, 2020 - Kacific Broadband Satellites Group (Kacific) has started directing resources towards the planning and design of its next satellite, Kacific2. Kacific2 will add capacity to its largest, high-demand markets of Indonesia, the Philippines and Papua New Guinea, as well as expand its reach wider into South East Asia and further into Central and Western Asia, and potentially Eastern Africa. Like Kacific1, Kacific2 will use a spot beam system with dynamic bandwidth reallocation to respond to changes in market demand pre and post launch. This advanced technology allows Kacific to respond rapidly to new growth opportunities and provide a broader range of services for each market, by changing bandwidth configuration even when the satellite is already in orbit. Kacific2 will also take advantage of the latest beam forming technologies.

Gilat Successfully Demonstrates Carrying 5G Traffic over Thaicom's GEO HTS Satellite

October 29, 2020 - Gilat Satellite Networks Ltd. successfully demonstrated carrying 5G traffic with outstanding performance over Thaicom's GEO HTS satellite. With this successful demonstration, Gilat's cellular backhaul solution is declared operational and ready for implementation in the 5G architecture. Superior user experience was recorded using Gilat's Capricorn PLUS VSAT in the live demonstrations last month with two MNOs over Thaicom's IPSTAR GEO satellite. Using a 5G handset, a large number of applications including Browsing, Speedtest, Youtube 4K, VoLTE, ViLTE, Virtual Reality, Augmented Reality and even communication with a drone providing a live video stream, were tested with excellent results. The tests were done with a number of 5G architecture options, including Standalone (SA) and Non-Standalone (NSA), using Gilat's Capricorn PLUS with adaptation of its patented GTP acceleration, reaching speeds of 400 Mbps download and 100 Mbps upload and at times showing results better than the terrestrial connection.

IEC Telecom Launches Maritime Communication Solution for Small & Medium Sized Vessels in Asia

October 29, 2020 - IEC Telecom Group (IEC Telecom), satcom solutions provider, debuts OneGate Marine Compact to equip small and medium sized vessels in Asia, with VSAT-like connectivity by optimizing L-Band capacity. Following its successful launch in Europe earlier this year, IEC Telecom's OneGate Marine Compact is now available in Asia allowing small and medium sized vessels, which represent close to 50% of shipping traffic in the region, to enjoy connectivity at sea previously available only to larger vessels. The fleet of small and medium-sized boats is currently underserved by the maritime communication sector. The existing VSAT terminals are unsuitable for use on these vessels due to size and high sensitivity to

movements. The smaller the vessel the more prone it is to vibration; under harsh weather conditions at sea, directive VSAT antennas would be unable to guarantee stable signals. Additionally, current solutions in the market require high capital investment and a long-term commitment, with a minimum of three-year service contracts.

NanoAvionics Invests and Expands in the UK

October 29, 2020 - NanoAvionics is expanding its space sector business in the United Kingdom by moving to a new, larger facility for satellite assembly, integration and testing (AIT) as well as sales, technical support and R&D activities in Basingstoke (50 miles/80 km outside Central London) this month. Having already developed a hub in Lithuania and two in the USA, the move, entirely financed by NanoAvionics, is a first step for its UK growth plans by creating jobs in the space sector and a local technology cluster with a dedicated supply chain of companies in Britain. Having already developed a hub in Lithuania and two in the USA, the move, entirely financed by NanoAvionics, is a first step for its UK growth plans by creating jobs in the space sector and a local technology cluster with a dedicated supply chain of companies in Britain. The new facility will allow NanoAvionics to keep thriving and provide nanosatellite AIT services to its growing and existing customer base in the UK. NanoAvionics' customers in the UK include IoT connectivity provider Lacuna Space and Sen, a space company developing its "EarthTV" constellation to stream real-time and timely Ultra-High Definition (UHD) videos of Earth.

Exotrail Launches Satellite Mission Software Suite within the French Space Agency (CNES)

October 29, 2020 - In the frame of a software licensing contract signed this summer, CNES mission design analysis and system engineering teams are now using ExoOPS™ – Mission Design advanced functionalities developed by Exotrail in its ExoOPS™ software suite. Available as a Software-as-a-Service (SaaS), ExoOPS™ – Mission Design relies on an orbital mechanics environment designed and developed by Exotrail software & space mechanics team based in Toulouse (France). Through user-friendly interfaces, ExoOPS™ – Mission Design provides CNES teams, in addition to others existing tools, with a quick processing and easy-to-use software able to run complex mission design analysis such as multiple scenario constellation deployment, simulation and optimization of low-thrust maneuvers, propulsive system benchmarking analysis up to spacecraft sub-system performance analysis. Connected to IDM-CIC, an orbital platform definition and design software tool used by CNES in phase A/0 project, ExoOPS™ – Mission Design allows to run low-thrust analysis for spacecraft mission carrying electric propulsion system through smooth and easy data exchanges.

ST Engineering iDirect Achieves World's First Live MF-TDMA Demo on Telesat LEO Satellite

October 28, 2020 - ST Engineering iDirect, a company of ST Engineering North America, has announced the successful completion of the first Over-the-Air (OTA) testing of iDirect's Multi-Frequency Time Division Multiple Access (MF-TDMA) return link on the Telesat Phase-1 Low Earth Orbit (LEO) satellite. The milestone achievement demonstrated dynamic sharing of bandwidth among multiple terminals within a LEO constellation, a capability that extends the capacity and flexibility of Telesat's multi-beam beam hopping architecture, and opens up a wide range of use cases for Telesat's LEO customers in the commercial, government, and defense markets for land, land-mobile, aeronautical, maritime, and other applications. The testing was conducted at Telesat's Allan Park facility and featured ST Engineering iDirect's VSAT platform networked across multiple satellite modems. The iDirect platform was able to compensate fully for the LEO satellite link dynamics, including time, frequency, signal variation and Doppler effects. Short guard times (the time intervals required between radio bursts to prevent self-interference) were achieved, comparable in length to guard times used on GEO satellite links, without compromising capacity or spectral efficiency.

NXTCOMM Leases Capacity on EUTELSAT E117WA for Over-The-Air Testing of its Electronically Steered Antenna

October 28, 2020 - NXT Communications Corporation has signed a capacity agreement with Eutelsat Communications for capacity on Eutelsat's E117WA satellite, aimed to provide the Over-The-Air Testing of NXTCOMM's proprietary flat-panel terminals that will offer high-speed connectivity to aviation, military and other mobility markets. In June, NXTCOMM unveiled its new Electronically Steered Antenna (ESA), a building block for a portfolio of next-generation, lower-cost commercial satellite antennas designed to meet global demand for cost-effective worldwide mobile connectivity. Under the agreement, NXTCOMM will also offer satellite capacity to customers seeking a differentiated connectivity experience not available from existing service providers. NXTCOMM will lease capacity on EUTELSAT 117 West A, located at 116.8° West, which offers high-power Ku-band coverage over North and South America.

Comtech Awarded \$2.7 Million in Orders from U.S. Army for Mobile Satellite Equipment

October 28, 2020 - Comtech's Government Solutions segment, was awarded \$2.7 million of additional funding on a previously announced three-year \$124.2 million contract to provide ongoing sustainment services and baseband equipment. The contract has been funded \$105.7 million to date. "Comtech continues to remain a trusted provider to the warfighter by refreshing existing communications systems, and providing training and field support around the world," said Fred Kornberg, Chairman of the Board and Chief Executive Officer of Comtech Telecommunications Corp. "This additional funding re-emphasizes our partnership with the U.S. Army." The Mission-Critical Technologies group is focused on ensuring its customers are able to successfully carry out their mission, whether that be communicating in an austere environment on land or at sea, launching or tracking a satellite, or protecting the cyber security posture of their network.

US DoD Awards Gilat Multi-Million-Dollar Orders for Military Communications Program

October 28, 2020 - Gilat Satellite Networks Ltd. announced that its subsidiary Wavestream received multi-million-dollar orders from the US Department of Defense (DoD). Wavestream's unparalleled high-power 50W Ka-band military Block Upconverter (BUC) powers the DoD military communications program. Wavestream's 50W Ka-band BUC is the most widely deployed solid state amplifier built at this power level. Wavestream's production capacity of military-grade high-power Ka-Band SSPA/BUCs is unmatched and as such military customers have been trusting Wavestream's innovative and reliable RF solutions for over 14 years.

Viasat Covers Entire Country of Brazil with High-Quality Internet

October 28, 2020 - Viasat announced it has completed the roll-out of its reliable, high-quality residential internet service to 100% of the states in Brazil. With this achievement, the Company is now the only satellite internet service provider (ISP) capable of making high-speed internet available across the country. Initially launched in July 2020, Viasat's residential service covered seven states and the Federal District. In September 2020, the Company expanded internet service to 14 more states, reaching 93% of Brazil's population, and today, it now offers internet service nationwide – adding the final five states to its service plans – Rio Grande do Norte, Paraíba, Piauí, Tocantins and Roraima. Viasat's residential internet service for Brazil uses bandwidth from the Telebras SGDC-1 satellite to deliver satellite internet services. Viasat has been investing in Brazil since 2018 and has set up a team with local expertise that is highly-focused on delivering connectivity solutions to the Brazilian people. Viasat is working with local partners to provide in-market sales, fulfillment, and technical support expertise for the residential internet service and is currently onboarding and training dealers through an online program.

Thales and Optus Receive Next Generation SBAS Signal in Australia

October 28, 2020 - In an important milestone for the delivery of a SBAS (Satellite Based Augmentation System) for Australia and New Zealand, Thales Australia and Optus Satellite have successfully received a new Thales SBAS signal in Western Australia. This testing uses a Next Generation Thales SBAS technology developed especially for customers close to the equator with difficult ionospheric conditions, like Australia and New Zealand. BAS and PPP (Precise Point Positioning) will deliver a greatly enhanced positioning service for Australia and New Zealand under the Southern Positioning Augmentation Network being undertaken jointly by the Governments of Australia and New Zealand. In order to test and validate key subsystems for the delivery of early services to Australia and New Zealand should Thales be selected to supply the Southern Positioning Augmentation Network, the transmission received in WA was generated by Thales Alenia Space using the NIGCOMSAT-1R satellite, currently involved in testing of a Next Generation SBAS solution.

L3Harris Becomes Key Strategic Partner for Inmarsat Global Government L-TAC and Global Xpress

October 28, 2020 - Inmarsat announced a new agreement with L3Harris Technologies' Communication Systems business, appointing the global aerospace and defence technology innovator as a major strategic partner to help deliver and support L-TAC and Global Xpress (GX) services into the government market. The government market for satellite communications has gone through a period of reorganisation and consolidation in recent times as authorities prioritise and reallocate resources to meet the ever-changing requirements of the current global situation. Ensuring that satellite communications services are responsive and capable to meet these requirements in a timely manner, Inmarsat is constantly appraising government-focused solutions and the route to meeting market needs. This ongoing process has led to the new partnership with L3Harris and Inmarsat's Global Government business, which delivers support to governments worldwide outside the United States. Inmarsat's award-winning L-TAC service offers satellite

based Beyond Line Of Sight (BLOS) communications on the move for UHF and VHF radio users. When coupled with the more than 1 million L3Harris tactical radios already supplied to armed forces around the world, this partnership will deliver an enhanced operational experience for government radio network operators by providing a BLOS capability over Inmarsat's L-band network without the need to modify their existing radio hardware.

Globalsat Group Successfully Tests Iridium Edge Pro

October 28, 2020 - The Pan-American consortium Globalsat Group, with a multi-country presence throughout the Americas, has been taking part in the successful "beta" tests of the Iridium Edge Pro, the new ultra-compact terminal for Iridium's SBD service, with on board programmatic capabilities, satellite location signal receiver and various interfaces. The combination of CANbus and traditional Modbus enhances the flexibility of this satellite IoT device. Iridium partners can also take advantage of the BLE connectivity of Iridium Edge Pro by creating sophisticated solutions which incorporate wireless sensors that collect vital information and deliver it in real time. By having a built-in GNSS reception module (GPS and other navigation and time systems), it allows resource tracking anywhere in the world, reporting positions and conditions through the Iridium constellation, thus being an extremely easy device to install and link to the resources which need to be monitored or controlled.

Orbcomm and Inmarsat to Provide Next-Generation, Global IoT Service

October 27, 2020 - Orbcomm and Inmarsat announced that they will extend their agreement through at least 2035 and enhance their strategic partnership. The two companies will collaborate on joint product innovation and distribution of next-generation IoT satellite services, telematics devices and end-to-end solutions that offer the best-in-class combination of high bandwidth data packets with low-cost terminals. As part of the partnership, Orbcomm and Inmarsat are developing a next-generation service called OGx, which features two new offerings to suit future customer demand. The first is a higher data rate service offering designed to be nearly 40 times faster than the current IsatData Pro (IDP) service, allowing for much larger messages and faster delivery times. Orbcomm's current generation IDP terminals can be seamlessly upgraded over-the-air to the higher data rate OGx service, so customers can start development and integration now to ensure their solutions are market-ready when the OGx network becomes available expected in 2022. In addition, Orbcomm and Inmarsat are designing a second OGx offering, which is extremely power-efficient, to support a daily message for multiple years on a satellite terminal utilizing a single AA battery, making it ideal for remote monitoring and environmental sensing applications. Both OGx offerings are designed to have expanded broadcasting capabilities to send data to large groups of terminals and can leverage multiple modes of operation that can be tuned specifically for the required application.

Intellian Launches C700 Iridium Certus Maritime Terminal

October 27, 2020 - Intellian has launched its C700 Iridium Certus maritime terminal, one of the most powerful and technically advanced Iridium Certus terminal on the market. With its best-in-class RF performance, the C700 can deliver out-of-the-box uplink speeds of 352kbps and downlink speeds of 704kbps by default, with equally impressive low-elevation-angle RF efficiency thanks to its unique 12-patch phased array antenna technology. It will support three high-quality, low-latency phone lines simultaneously; and as a solid-state antenna with no moving parts inside, the C700 is especially robust, requiring no scheduled maintenance over its lifetime. The advanced performance of the C700 provides customers across all markets with the flexibility to deploy it as the primary communication antenna or as a companion to a VSAT system for seamless redundancy. For primary communications, the Below Deck Unit (BDU) incorporates key features which make it ready to deploy without additional cost, including firewall, IP PBX, WAN port and built-in Wi-Fi. Hardware and software functions such as these, incorporated into the system, make the C700 the most powerful, feature-rich L-band solution on the market, delivering best in class performance and functionality. The innate stability and reliable connectivity afforded by the C700 also make it an ideal platform for future safety services, including the Global Maritime Distress and Safety System (GMDSS).

Ovzon Introduces Ovzon T6, a New Portable Satellite Terminal

October 23, 2020 - The new Ovzon T6 terminal is based on Ovzon's satellite terminal expertise and includes new ground-breaking antenna technology, featuring automatic polarization adjustment. The terminal is lighter and smaller than the present industry standard, Ovzon T5, thus pushing mobility further. With 50 Mbps transmit and receive capabilities in a laptop sized format the new Ovzon T6 is the world smallest and lightest terminal with such performance, with the Ovzon T5 as a close second. The all-

in-one rugged design, fully integrated, is compact without sacrificing performance. The weight is only 6 kg and the form factor makes it very easy to hand carry. The patented Ovzon antenna with its electrical polarization removes the need for third axis mechanical polarization adjustment truly making it as easy to use as an L-band terminal. The intuitive graphical interface gives the user complete control through the built-in display or with any smartphone, tablet or laptop. The terminal, that is IP 67 protected, is designed for use in extreme weather conditions, thus meeting the most demanding user needs.

Comtech EF Data Receives \$1.5 Million Satellite Modem Order

October 22, 2020 - Comtech EF Data Corp., which is part of Comtech's Commercial Solutions segment, received a \$1.5 million order for Single Channel Per Carrier (SCPC) satellite modems from a Tier 1 defense contractor. The satellite modems will be utilized by a defense entity to upgrade and expand its existing network that included the prior generation of long-performing CDM-625 Satellite Modems by Comtech EF Data. Following an extensive technical evaluation and battery of tests, the customer selected Comtech EF Data's CDM-625A Advanced Satellite Modem as the platform for its network upgrade and expansion. The defense entity will benefit from the range of advanced features available in the CDM-625A, including DoubleTalk® Carrier-in-Carrier® bandwidth compression, Carrier-in-Carrier Automatic Power Control, 4-port 10/100Base-T managed Ethernet switch with VLAN capability and embedded priority-based Quality of Service.

Gilat Awarded \$20 Million Cellular Backhaul Managed Service Contract Renewal and Expansion from Tier-1 MNO in the United States

October 22, 2020 - Gilat Satellite Networks Ltd. announced that it was awarded a \$20 Million cellular backhaul managed service three-year contract renewal and expansion from a Tier-1 MNO in the United States. With this award, Gilat becomes the MNO's sole vendor to provide the end-to-end services for LTE backhauling and disaster-recovery, while replacing existing satellite technologies. This significant contract expansion was awarded to Gilat due to its proven managed service expertise and unmatched LTE over satellite technology. Gilat has also demonstrated unparalleled capabilities in all three dimensions: technology, delivery and operation. Gilat's superior technology ensures the required user experience and enables a smooth transition to 5G, while the delivery and day-to-day operational needs were met consistently and professionally.

Avanti and ST Engineering iDirect Support Successful Integration of 5G into Satellite Network

October 21, 2020 - Avanti Communications, the leading Ka-band high throughput satellite operator across Europe, Middle East and Africa and ST Engineering iDirect, the leading satellite ground infrastructure company, have played integral roles in the completion of the successful integration of a commercially available 5G core network into a live satellite network. This marks a major milestone for the initiative and the industry, as it marks the first time a live satellite network has been managed and operated using a standard and unmodified commercially available 5G core network. The Sat5G project involves the integration of satellite into 3GPP 5G testbed networks. Using the testbeds, several 5G use case demonstrations over live satellite links were performed, with the satellite links performing several different tasks. The project undertook research and demonstrated the benefit of satellite technology in delivering content to the network edge; providing backhaul to cellular base-stations, improving broadband experience to premises, and providing connectivity to aircraft and moving platforms through emulated GEO and over-the-air MEO satellite connectivity.

Satmotion Pocket for iPhone 12

October 21, 2020 - Satmotion Pocket, the best VSAT Auto-Commissioning tool, developed by Integrasys has been updated and it is now available for the new iPhone 12 Pro Max, iPhone 12 Pro, iPhone 12, iPhone Mini. After days of simulations and tests we can firmly confirm that Satmotion Pocket newest release works on the new Apple product range. Integrasys priority is to innovate making available its innovative technologies always ahead of the curve, taking advantages of the partners innovations and market trends. The hard work carried out by developers during the last weeks made it possible. Satmotion Pocket is an essential tool for an easy, quick, and accurate VSAT deployment. Simplifying the commissioning process and making possible the installation by non-skilled operators in VSAT installations. Also, the field installers do not need to coordinate or communicate with the NOC to finish the installation, which drives a significant time reduction, speed up time to market and save cost.

ORBCOMM's Versatile Communication Enables Satellite Connectivity to IOT Applications

October 21, 2020 - ORBCOMM Inc., a global provider of Internet of Things (IoT) solutions, today

announced that it has launched the ST 2100, a state-of-the-art satellite communications device that enables solution providers to easily add satellite connectivity to their IoT applications and expand to dual-mode connectivity in remote areas with limited cellular coverage. ORBCOMM's rugged and environmentally sealed ST 2100 is targeted for a number of vertical markets, such as fleet management, maritime and utilities, including fixed and mobile assets. ORBCOMM's ST 2100 can be quickly and easily integrated into a variety of IoT applications with minimal development. Solution providers can leverage the versatile ST 2100 to provide backup satellite connectivity or serve as the sole communications device where cellular networks are unavailable or unreliable, including areas with high network congestion. The power-efficient device offers maximum reliability and security by allowing messages to be sent during temporary power loss. The device also includes a built-in navigation module that enables global reporting of location data to provide complete visibility for industrial IoT solutions. In addition, over-the-air satellite updates allow the ST 2100 to receive updated firmware versions without having to send a technician to the site, saving time and money to enable new features. With ORBCOMM's new device, solution providers can deliver ubiquitous and affordable dual-mode connectivity to customers, along with enhanced communication reliability, improved asset visibility and access to new markets and geographies.

Cobham Launches Industry's Highest Density NAND Flash Memory Module for Space Applications

October 21, 2020 - Cobham Advanced Electronic Solutions (CAES) announced the industry's highest density NAND flash memory device for a range of demanding space applications. The 4 terabit (Tb) triple-level cell (TLC), NAND Flash Memory Module delivers 32 times the density of the closest competing device while fitting into the same industry-standard 12mm x 18mm plastic-encapsulated microcircuit (PEM) package. With access to unparalleled storage capacity, designers can significantly increase sensor and digital signal processing in applications such as solid-state drives and recorders, reconfigurable computing systems, imaging and communications data buffering applications.

Mynaric Inks Deal with Telesat to Supply Terminals for DARPA's Blackjack Satellite Program

October 21, 2020 - Mynaric has been selected by Telesat to supply multiple units of its flagship CONDOR optical inter-satellite link terminals to DARPA's Blackjack Track B program, in a deal demonstrating continued success for Mynaric in accessing the U.S. government market. The terminals are scheduled to be delivered in mid-2021 to DARPA's Blackjack System Integrator with satellites scheduled to launch in the latter part of 2021. The launch will be the inaugural ride to space for Mynaric's flagship CONDOR terminals – a key milestone and final trial for the product's successful market introduction. Telesat aims to utilize the mission to demonstrate the capabilities, as well as the interoperability, of laser communication products from different vendors as part of the DARPA Blackjack program.

Inmarsat and Hughes Bring Inflight Connectivity to North America

October 20, 2020 - A major strategic collaboration with Inmarsat and Hughes Network Systems, LLC marks an important new step change for North American commercial airlines and their passengers. GX+ North America is a transformational aviation connectivity solution has been specifically designed for North American commercial airlines and is available today. It seamlessly integrates the unrivalled capacity of the Hughes JUPITER™ High-Throughput Satellite (HTS) constellation across North America with the extensive worldwide coverage and resilience of our Global Xpress (GX) HTS satellite network. Together they bring a unique combination of unprecedented capacity, speed and reliability to the region, unavailable from any other satellite provider. The ground-breaking new solution underscores our strategic vision beyond the pandemic and into the future needs of commercial airline fleets in North America, whose passengers will require ubiquitous connectivity as they return to the skies.

Kratos Introduces OpenSpace™ Platform Supporting Dynamic, Software-Defined Satellite Ground Systems

October 20, 2020 - Kratos Defense & Security Solutions, Inc. announced today the release of OpenSpace™, a software platform and family of virtual products that enable satellite operators, Ground-as-a-Service (GSaaS) providers and others in the space services supply chain to create fully software-defined, dynamic ground systems. OpenSpace is a leap forward in ground network technologies that allows operators to apply advances in Software-Defined Networking (SDN) to the special needs of the space industry. SDN technology is already common in the broader communications and IT worlds, however adoption of SDN has been slower in the space industry, in large part because of the unique challenges of virtualizing Radio Frequency (RF) equipment and reliably digitizing the RF waves that are the staple of satellite operations. Kratos has solved these challenges by virtualizing hardware components in its quantum™ line and by reliably digitizing RF signals for processing in digital environments.

mu Space Advanced on Future Technology and Expects to Complete Fundraising at \$100 Million Valuation

October 20, 2020 - mu Space and Advanced Technology, Satellite and Space Technologies Venture, led by an aerospace engineer James Yenbamroong, is in talks to raise up to \$25 million in series B funding at a pre-money valuation of \$75 million (2.3 billion Baht) reviewed by Bangkok Post. mu Space plans to use the new funding on new satellite broadband services, build a future factory and autonomous manufacturing systems with new AI and machine learning technologies to make its own production capability of satellite components and future spacecraft operational, and to perform further space flight tests to validate technologies for spaceship and internet data center constellation mission concept unveiled at the press conference "MOU signing between TOT and mu Space"

KSS Line Signs with Hyundai Global Services for Smart Ship solution by Inmarsat and Intellian

October 20, 2020 - Hyundai Global Services (HGS) has announced the signing of a contract to deliver its Smart Ship and Satellite Communications package to KSS Line shipping fleet supported by Inmarsat's Fleet Xpress and digital solution Fleet Connect. This is the first time that the Integrated Smart Ship (ISS) solution from the world's largest shipbuilder Hyundai Heavy Industries (HHI) will be delivered as a single package with a satellite communications service. The Smart Ship and Satellite Communications package is a combination of the ISS – an IoT platform for ships, developed by HHI Group to support vessel operation and device optimization – supported by Inmarsat's dedicated bandwidth service. This achievement is a direct result of a collaboration between HGS, Intellian and Inmarsat, the world leader in global, mobile satellite communications. Intellian and HGS signed a Memorandum of Understanding (MoU) in July 2019, and a similar arrangement between HGS and Inmarsat was signed in June 2019 at the Nor-Shipping exhibition in Oslo. The package will allow large volumes of measured data to be transmitted between ship and shore quickly and easily, facilitating remote operations and vessel management, monitoring and analysis services, through Fleet Connect dedicated bandwidth. This is separate from the vessel's Fleet Xpress connection that will be used for day-to-day business traffic and crew internet use.

Telesat Teams with Lockheed Martin on Space Development Agency Transport Layer

October 20, 2020 - Telesat U.S. Services, a wholly owned subsidiary of leading global satellite operator Telesat, is now part of the Lockheed Martin team which was recently awarded the Space Transport Layer Tranche 0 contract by the U.S. Space Development Agency (SDA). The Lockheed Martin-led team will provide on-orbit delivery of 10 space vehicles with optical inter-satellite links (OISLs), contributing to a total of 20 satellites in Tranche 0. As part of this team, Telesat will support a commercial interoperability exercise by working with the Lockheed Martin team to demonstrate interoperability between the OISLs of the SDA's Transport Layer satellites and those of Telesat's Low Earth Orbit (LEO) constellation. The OISLs native to Telesat LEO will be compatible with the SDA's OISL standard for an assured, resilient and secure network. OISL technology is the enabler of vastly improved network security, resilience and performance in any space communications network. As a commercial OISL leader, Telesat will work with Lockheed Martin to explore interoperability of the SDA Space Transport Layer Tranche 0 satellites with the Telesat LEO network. As part of the project, Telesat will conduct hardware and software testing on their LEO emulator at Telesat's U.S. Government facility. Through these partnerships, Telesat continues to showcase the possibilities of Telesat LEO in supporting government efforts and meeting the U.S. Government's unique unilateral requirements, including offering true global connectivity throughout the polar regions.

Paradigm's SWARM950 Type Approved for Use on Inmarsat with ST Engineering iDirect 950mp

October 20, 2020 - Paradigm's rugged carry-on SWARM950 terminal is now Type Approved on Inmarsat's Global Xpress network, providing extreme flexibility for high throughput, secure data services around the world. The SWARM950 is powered by the PIM providing the user with higher throughputs as a result of its enhanced power offering. With its ST Engineering iDirect 950mp modem, it also offers military grade security over both the commercial and military satellite frequencies. The PIM in the SWARM950 is the brains behind the terminal. It provides network flexibility and intelligent operation to the user and enables the terminal to achieve the highest possible throughput in any location, as well as having the ability to operate in TRANSEC mode and being FIPS 140-2 encryption compliant, as required. Already recognised as a low SWaP terminal, the SWARM950 provides full Mil-Ka and Ka-Band operation and can also operate in either Ku or X-band as operational requirements demand. The PIM950 is lightweight, power-efficient and industrialised to MIL-STD in order to meet the most rigorous military and government demands for mobile, tactical terminals providing security and always-on broadband capabilities.

Comtech Receives Ground Station Equipment Order from Africa's Largest Mobile Network Operator

October 19, 2020 - Comtech EF Data Corp., received a \$1.0 million order for satellite ground station equipment from the largest telecommunications company in Africa. The order specified the Heights™ Networking Platform and complementary Block Up Converters. The Mobile Network Operator ("MNO") will leverage the efficiencies provided by the Heights™ Networking Platform to enhance and improve its mobile backhaul capabilities and to launch additional enterprise services.

Gilat Satellite Networks Chosen by Southern Linc for 4G Cellular Backhaul Services

October 19, 2020 - Gilat Satellite Networks has been awarded by three-year managed service contract for cellular backhaul by Southern Linc. Gilat met Southern Linc's requirements of enabling embedded accelerated MPLS traffic, coupled with cellular 4G with GTP acceleration, a major technological innovation in satellite transmission. The agreement will enable Southern Linc to use satellite transmission for backhaul services when established networks are unavailable. Gilat satellite installations will be used to extend cellular coverage for voice and high-speed data services in remote and terrestrially challenged areas and in areas affected by severe weather. Gilat will also provide backup for terrestrial aggregation sites and an underlining level of monitoring and support for Southern Linc's large-scale LTE network. Gilat services met Southern Linc's challenge to provide high reliability with very strict requirements, including MPLS support. Gilat services will provide transparent and simplified accelerated backhauling over satellite and enterprise and 4G cellular traffic over MPLS. These services, coupled with Gilat's patented GTP acceleration technology are delivered with Gilat's SkyEdge II-c platform.

Ovzon Signs Strategic Agreement with Hellas-sat, Expanding Geographic Reach

October 16, 2020 - Ovzon and Hellas-sat have entered a strategic partnership to jointly offer high-capacity portable broadband solutions. The partnership leverages both companies' technologies, industry expertise, resources, and market presence to promote joint business. Hellas-sat provides satellite capacity to power the services in Europe and the Middle East, while Ovzon will package and market the solutions. The agreement is complementary to Ovzon's present agreements with Hispasat and Intelsat, bringing additional regional capacity in Europe. The service is based on Ovzon's mobile, easy-to-use, terminals and are brought to the market as a flexible service with fixed or mobile connection. The service includes terminal and connectivity and is available with different service levels. The terminal equipment is included in the service and the customers can get started at a basic level and gradually expand the use as needed. Under the agreement Ovzon and Hellas-sat will share the revenues from the services.

Inmarsat and Cobham SATCOM Enable Maldives Fisheries Sustainability with Fleet One

October 15, 2020 - Inmarsat and Cobham SATCOM have been awarded a new contract to connect 732 fishing vessels active in the Maldives Economic Exclusion Zone to Inmarsat's Fleet One maritime broadband services. Cobham's SAILOR Fleet One utilises the existing Inmarsat-4 satellite constellation to deliver the most reliable global voice calling and internet connectivity via a compact, lightweight antenna, and a simple installation process. The technology's affordability makes it particularly accessible for smaller boats looking to access maritime satellite communications for the first time. The go-ahead follows trials of Fleet One services and SAILOR Fleet One terminals from Cobham aboard 15 boats, confirming that performance exceeds specifications for a new vessel monitoring system (VMS) under the Maldives' Sustainable Fisheries Resources Development Project to improve Monitoring, Control and Surveillance in fisheries sector. The VMS project, agreed between Maldives-based Ooredoo and the Ministry of Fisheries and Agriculture, is funded by the World Bank. The five-year contract envisages the supply and maintenance of the VMS, to include Fleet One satellite communications over L-band from Inmarsat, airtime and secure communications server via Integrated Monitoring (IM) and SAILOR antennas from Cobham SATCOM installed by Ooredoo.

Thuraya's New Tracking and Monitoring Service Collaborating with FrontM for Fishing Vessels

October 15, 2020 - Thuraya, the mobile satellite services subsidiary of the UAE's Al Yah Satellite Communication Company (Yahsat), is collaborating with FrontM to launch Thuraya SatTrack, a cloud-based tracking and monitoring service that significantly increases operational efficiencies on board fishing vessels. Designed for the top-selling Thuraya MarineStar voice, tracking and monitoring solution, SatTrack will be available to users very soon. In spite of digitalization and increased influx of information, the high cost of integrating third-party services and solutions is limiting the growth of the fishing industry. Thuraya SatTrack is a low-cost turnkey subscription service that provides interactive, real-time fleet tracking to monitor vessels. It enables operations with detailed maps, up-to-date weather layers and customized alerts with position reporting. Thuraya SatTrack helps MarineStar users stay in command,

gain vital market advantage and contribute to sustainable fisheries by improving compliance with national and international regulations.

MarineTraffic Extends Partnership with ORBCOMM for Satellite AIS Data

October 15, 2020 - ORBCOMM Inc. has extended their contract through the end of 2023 for ORBCOMM's satellite Automatic Identification System (AIS) data used for ship tracking and other maritime navigational and safety efforts. MarineTraffic uses ORBCOMM's satellite AIS data to track movements of ships as well as their arrivals and departures in harbors and ports around the world. MarineTraffic, which has been an ORBCOMM partner since 2013, uses ORBCOMM's satellite AIS data to track real-time and historical movements of ships as well as their arrivals and departures in harbors and ports around the world. MarineTraffic combines ORBCOMM's comprehensive AIS data with positional data from their extensive network of land-based receiving stations to provide actionable maritime intelligence solutions and improve the maritime ecosystem. By leveraging ORBCOMM's reliable, high-performance AIS service, MarineTraffic helps their government and commercial customers enable maritime domain awareness, search and rescue, environmental monitoring and maritime intelligence applications. In addition, MarineTraffic will explore ORBCOMM's other monitoring solutions as part of their efforts to expand their offering for the shipping industry and provide complete supply-chain visibility.

Comtech EF Data Receives \$1.7 Million in Orders from Government Entity in Asia

October 14, 2020 - Comtech EF Data Corp. received an aggregate of \$1.7 million in orders for Up and Down Frequency Converters and Low Noise Amplifiers ("LNAs") from a large government entity in Asia. After a competitive request for proposal process and vendor evaluation, the government entity selected Comtech EF Data's Frequency Converters and LNAs to support a significant network upgrade. The Comtech equipment will replace a mix of vendors' installed equipment. The enhanced network infrastructure will support critical voice, data, and video applications, as well as inter-branch office communications. Comtech EF Data has developed and manufactured an extensive line-up of Frequency Conversion and Amplifier solutions for over 25 years, with L-, C-, X-, Ku- and Ka-Band offerings. The indoor and outdoor products are field-proven, cost-effective and provide the reliability and performance needed to support fixed and mobile/transportable applications for commercial and government customers. The industry-leading Frequency Converters feature high gain and low phase noise performance along with a patented Daisy Chain Redundancy system that fits within minimum rack space.

Marlink Maritime Global Service Network Hits More than 100 Shipping Hubs

October 14, 2020 - Marlink, the industry's leading provider of smart managed network solutions, has hit two customer milestones, extending its global Installation Quality Assurance Program (iQAP) to more than 260 trained personnel in more than 100 ports and connecting a record number of vessels in a single month. Marlink already provides the well-established hardware service and support network in 1,250 locations for spare parts and repair. In order to provide additional value for ship operators, Marlink has trained and certified personnel able to perform the complete range of installation, support and maintenance in the 100 busiest ports, a process that has proved vital during the COVID pandemic. Marlink's iQAP program was created to provide a uniform level of high quality managed services within the busiest ports of calls supported by Marlink's global backbone network and smart systems for operations, service coordination, procurement, equipment and logistics fulfilment.

Mercy Ships Uses SES Networks' Maritime Solution to Bring Healthcare to World's Deprived Regions

October 13, 2020 - Mercy Ships, the leading humanitarian mission delivering vital healthcare and medical training in some of the world's most economically deprived regions, has announced it will be using life-saving connectivity solutions provided by SES Networks to provide better healthcare services, the two companies announced today. *The Global Mercy*, the newest and the world's largest civilian hospital ship, will leverage SES Networks' Signature Maritime Solution, bringing about a substantial change in diagnostics and treatment onboard for its patients. The high-performance connectivity services will enable the *Global Mercy* to fully implement remote viewing for a compact digital scope and CT scanner that enables specialist pathologists to remotely diagnose a raft of complex, life threatening, or deadly diseases onboard. Mercy Ships will also leverage the connectivity to expand services and leave local communities with sustainable skills to care for their own. The *Global Mercy* medical staff will have the possibility to run live HD video training sessions from the operating room on board to deliver unparalleled medical training and support.

Comtech Telecommunications Corp. Receives \$5.9 Million in Funding from U.S. Army

October 13, 2020 - Comtech, Mission-Critical Technologies group, received additional funding of \$5.9 million on its previously announced contract to provide the U.S. Army with global field support services for military satellite communication ("SATCOM") terminals around the world. The contract has been funded \$41.1 million to date. The Army's mission-critical ground SATCOM terminals provide inter and intra-theater network communications with worldwide reach back capability. The field support contract covers diverse engineering and technical skills to support these SATCOM terminals, including logisticians, help desk, network engineering, security engineering, RF and satellite system engineering and support.

Spacecom and Ignite Power Sign Strategic Partnership Agreement to Provide e-Health Connectivity Solutions to Remote Clinics across Sub-Saharan Africa

October 13, 2020 - Spacecom and Ignite Power, a Pan-African developer of vital infrastructure projects, are pleased to announce the signing of a Strategic Cooperation Agreement. Under the new agreement, the companies will collaborate to install e-Health connectivity solutions in remote clinics, which will provide local medical teams with immediate access to physicians around the world, as well as data analysis over the cloud. Using designed-for-solar medical devices and systems and satellite connectivity, all will be powered by cost effective off-grid solar systems. With the support of global medical experts, doctors and paramedics in these rural areas will have the opportunity to expand their reach and knowledge to new treatments and procedures. The solution comprises of communication through Spacecom's advanced AMOS-17, digital High Throughput Satellite and Ignite's sustainable off-grid solar power solutions and diagnostic systems. The mutual solution enables an efficient infrastructure as the basis for digital communities and services to rural locations. It is set to create thousands of jobs while empowering an entire generation of students to new skills and remote learning capabilities, through e-Learning platforms.

Astroscale Brings Total Capital Raised to U.S. \$191 Million, Closing Series E Funding Round

October 13, 2020 - Astroscale Holdings Inc. has closed its Series E round with additional funding of U.S. \$51 million from a group of investors led by aSTART Co., Ltd. ("aSTART"). This latest round brings the total investment raised to U.S. \$191 million and makes Astroscale the most funded on-orbit services and logistics company globally and most funded space venture in Japan. The significant investment raised since its founding in 2013 has allowed Astroscale to establish a global footprint across five countries and grow to over 140 team members. Each of the five global offices are working in concert to achieve the Astroscale mission of safe and sustainable development of space for future generations. Astroscale Japan is on schedule to ship the pioneering End-of-Life Services by Astroscale-demonstration (ELSA-d) mission, the world's first demonstration of commercial orbital debris removal. Astroscale U.K. is leading the development of the In-Orbit Servicing Control Centre - National Facility, which will form the basis for satellite servicing mission operations. Astroscale U.S., and its newly established subsidiary, Astroscale Israel, are focused on satellite servicing research and developing a mission for life extension of geostationary satellites. With the addition of an administrative office in Singapore, Astroscale is uniquely positioned to meet the global challenges of securing orbital sustainability.

ANGELS, France's First Industrial Nanosatellite, Extends the Scope of Space IoT

October 13 2020 - Five times more powerful and 10 times smaller than its predecessors, ANGELS has been designed to address the current challenges of New Space: miniaturization, scaled-up performance and very low consumption. This technological wonder is opening up its services to current users and offering IoT players premium access to this new connectivity. ANGELS gives a first taste of the opportunities provided by Kinéis, the first constellation of European nanosatellites dedicated to IoT. Carrying a state-of-the-art ARGOS instrument, ANGELS is the operational proof of the success of the French nanosatellite sector, supported by CNES and leading manufacturers such as Thales Alenia Space, HEMERIA and Syrlinks.

Maxar Extends Contract with Esri to Provide Industry-Leading Satellite Imagery Basemaps and Expanded Rights for App Developers

October 13, 2020 - Maxar Technologies announced that its longtime partner Esri has signed a multi-million dollar contract extension to continue licensing data for the ArcGIS Living Atlas of the World through 2023. This expanded agreement ensures access to Maxar imagery by the millions of ArcGIS users worldwide. It also provides expanded rights to empower the growing community of Esri developers focused on commercial location-based applications to integrate Maxar imagery products for the first time. Esri recently named Maxar a 2020 Cornerstone Partner, marking a 20-year partnership of dedication to the geographic information systems (GIS) community. Maxar continues to be Esri's foundation imagery provider, supplying high-resolution satellite imagery for the Living Atlas of the World, a collection of

geographic information layers and data sets for the world, including maps, apps and data layers and population statistics of all types. These Maxar products are available in the Living Atlas. Vivid and Metro are the highest resolution, most accurate and visually consistent global imagery basemaps made from Maxar satellite imagery available on the market.

Orbsat Corp Expands Global Distribution Agreement with Kymeta for Ku-Band Flat-Panel Satellite Terminals

October 13, 2020 - Orbsat Corp today announced that its Global Telesat Communications (GTC) subsidiary has expanded its initial global sales and distribution partnership with Kymeta to encompass its full line of unique Ku-band flat-panel satellite communication terminals including its newly launched Kymeta u8 product. The Kymeta u8 is the world's only commercially available flat panel electronically steered antenna built specifically for mobility and designed for the needs of both military and commercial customers enabling complete coverage of the Ku-band with highly reliable electronic beam steering with no moving parts. It is available as an antenna, as a terminal, or in flyaway configurations, and it can be paired with Kymeta's new satellite and hybrid satellite-cellular connectivity solutions.

Elcome Expands into Europe with New Service Center in Mediterranean

October 13, 2020 - Elcome International, one of the largest providers of maritime systems integration, installation and on-board services worldwide, today announced the establishment of its first service center in Europe. Based in Sevilla, Spain, the new Elcome service center will offer shipboard navigation and communication systems, satellite connectivity solutions and coastal surveillance solutions with an experienced service team of engineers and technicians. The company will also provide the Global Maritime Distress and Safety System (GMDSS) annual radio surveys, annual testing of the Automatic Identification System (AIS), annual performance tests of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR), gyrocompass overhauls, repairs, installations and other services on-board and at ports in Europe and North Africa. The new office in Europe marks a major strategic move by the Dubai-based marine technology company, complementing its existing network of 21 sales and service offices stretching from Suez to Singapore.

Speedcast International Ltd Files Plan of Reorganisation

October 12, 2020 - Speedcast International Limited has filed a Plan of Reorganisation and Disclosure Statement outlining the terms for its financial restructuring under chapter 11 of the United States Bankruptcy Code. The documents set out a clear and defined timeline for creditors to submit their votes in advance of a Plan confirmation hearing anticipated in December 2020. The Company expects to emerge in the first quarter of 2021, after receiving final regulatory approvals and customary closing conditions outlined in the Plan. Upon emergence, the terms of the Plan would provide Speedcast with a new \$500 million equity investment, led by affiliates of Centerbridge Partners, L.P., and a reduction of all of the \$634 million senior secured debt of the Company. The Plan has received the unanimous support of Speedcast's Board of Directors and has the support of the Official Committee of Unsecured Creditors, which has issued a letter recommending that all unsecured creditors vote to accept the Plan.

METIS Signs up as New Inmarsat Fleet Data Application Provider

October 12, 2020 - Integrated digital shipping platform provider METIS Cyberspace Technology SA and Inmarsat, the world leader in global, mobile satellite communications, have signed an agreement for METIS to join the fast growing group of certified application providers to offer a dedicated application for Inmarsat's Fleet Data service customers. The agreement will enable ship owners/managers collecting data through the Inmarsat Fleet Data service to have access to advanced data analysis, performance evaluation and predictive services available through the METIS cloud platform. Fleet Data collects data from onboard sensors, pre-processes it and, via the Inmarsat satellite network, uploads it to a central cloud-based database equipped with a dashboard and an Application Process Interface (API). METIS also provides analysis and services related to the performance of all critical mechanical and electrical machinery working on the vessel, such as main engines, ballast water treatment systems, diesel generators, scrubbers and boilers.

KSAT Passed 20 000 Contacts in September on KSATLITE, Their Smallsat Network

October 8, 2020 - KSAT has delivered more than 20 000 passes on the KSATLITE network in September. This is all-time-high for LITE, doubling the number of supports per month since January this year, and the growth seems to be continuing. KSATLITE is KSAT's easy-to-use ground network solution offering optimized support for Smallsats and big constellations. The offered solution has gained popularity in the

Smallsat marketplace and is currently experiencing high demand. At the beginning of the year the KSATLITE network accounted for 10 000 contacts out of the 50 000 monthly contacts on the KSAT global network. By the end of September that number was more than 20 000. The strong growth is caused by several factors but clearly indicates a vibrant and growing commercial space industry despite Covid -19. The total volume is growing due to the number of customers, the number of satellites launched, as well as the number of contacts required by both new and existing customers.

ZIPAIR Selects Panasonic Avionics for Inflight Connectivity

October 8, 2020 - ZIPAIR has selected Panasonic Avionics Corporation (Panasonic) to provide inflight connectivity (IFC) solutions for its Boeing 787-8 aircraft. ZIPAIR's B787s will be fitted with Panasonic's inflight Wi-Fi service. Panasonic's next generation connectivity enables a host of connectivity benefits, from fast internet to video streaming, all powered by its new satellite modem featuring bandwidth up to twenty times greater than previously available. The announcement marks the beginning of Panasonic's relationship with ZIPAIR, the new Japanese low-cost carrier which is a 100% subsidiary of Japan Airlines. ZIPAIR was established in 2018. It is a low-cost carrier and is due to operate medium to long-haul international flights. It currently operates a fleet consisting of two Boeing 787-8s, transferred from its parent's fleet.

Eutelsat Announces Successful 8-year Bond Issuance

October 7, 2020 - Eutelsat Communications today announced the successful issue by Eutelsat S.A., of 8-year senior unsecured bonds for a total of €600 million. Eutelsat has taken advantage of the current competitive market environment to raise long-term financing with an 8-year maturity on attractive terms. The transaction was well received by a diversified investor base, demonstrating the market's confidence in Eutelsat's long-term business model. The Bonds will be issued at 99.619 per cent and will be redeemed at 100 per cent of their principal amount at maturity. They will have a coupon of 1.500 per cent per annum and will be cleared through Euroclear France, Clearstream and Euroclear. An application will be made for the Bonds to be listed on the Official List, and admitted to trading on the regulated market, of the Luxembourg Stock Exchange. The Bonds will mature on 13 October 2028. Delivery and settlement are expected on 13 October 2020. The Bonds will be used to fully redeem the €500 million principal amount bonds issued in June 2016 at a fixed rate of 1.125 per cent per annum and due June 2021, as well as for general corporate purposes. The net proceeds of the Bonds will be temporarily invested in short-term, low-risk, liquid investments until they are used for their stated purpose. This transaction allows Eutelsat to extend its debt maturity profile at compelling conditions.

Momentum to Become Public through Merger with Stable Road Acquisition Corp

October 7, 2020 - Momentum, a commercial space company offering in-space transportation and infrastructure services, today announced it has signed a definitive merger agreement with Stable Road Acquisition Corp. that will result in the Company becoming publicly listed. Upon the closing of the transaction, the combined operating company will be named Momentum Inc. and its securities will be listed on Nasdaq and trade under the ticker symbol "MNTS." Momentum graduated from the prestigious Y Combinator program and has raised venture and private funding from notable investors such as Prime Movers Lab, Y Combinator, Tribe Capital, University of Wyoming Foundation, Lerner Enterprise, Tony Robbins, Joe Montana's liquid2VC fund and others.

Cobham and Kepler Achieve Best-in-Class Data Rates on Maritime Satellite Terminals over LEO Network

October 7, 2020 - Cobham SATCOM, a market-leading provider of radio and satellite communications solutions, and Kepler Communications, a pioneer of nanosatellite telecommunications solutions, have today announced its completion of connectivity trials on Kepler's low-Earth orbit (LEO) network with the SAILOR 600 VSAT Ku antenna system. The companies demonstrated downlink rates of 150 Mbps and uplink rates of 130Mbps on a 65cm antenna with a 6W BUC over the Kepler LEO network. These data rates are the fastest achieved in an antenna of this class. Typically these speeds are only achieved on much larger antennas with bigger amplifiers and using much larger satellites. The tests were the first of their kind to be carried out by an antenna and satellite operator and obtained data transfer speeds 30x faster than any antenna of a similar size currently available for the maritime sector; further strengthening the market-leading capabilities of Cobham SATCOM's and Kepler Communications' partnership. The successful completion of the test will pave the way for the commercial rollout of the SAILOR 600 VSAT Ku on the Kepler LEO network. The partnership's steadfast reliability and ability to rapidly transfer large quantities of data will make it the optimal choice for highly specialized vessels operating in remote

locations, such as Arctic research vessels and seismic exploration vessels. For example, it will enable such vessels to manage and offload large quantities of data in near real-time, and, in cases were relevant, enable much faster progress on studies pertaining to critical global issues, such as climate change. The two companies are already working on a number of live customer trials using the SAILOR 600 platform for both maritime and fixed site applications.

Harvest Technology Group Agreement with AST and Inmarsat to Gain Ultra-low Bandwidth Remote Monitoring Solutions for Global Energy, Utilities and Mining Sectors

October 6, 2020 - Inmarsat has entered into an agreement with Harvest Technology Group, a remote monitoring and communications specialist, and AST, a global leader in satellite and radio communication systems and an existing Inmarsat partner. The agreement will provide Harvest's customers across the mining, energy and utilities sectors with the tools to remotely monitor assets, coordinate site surveys and conduct maintenance operations over real-time video and audio transmitted via ultra-low-bandwidth satellite communications. The energy, utilities and mining sectors are facing increasing pressure to maintain vital infrastructure and equipment while safeguarding workers, all in the most cost-effective way possible. With global travel restrictions and sustainability challenges now impacting many organisations, pressure is also mounting to allow personnel in remote locations to be connected live back to base, the office or home, in order to enable simultaneous review and decision-making worldwide. The alliance will bring greater functionality to Harvest's 'data-anywhere' solutions, which can transmit high-quality synchronised video and audio across an extremely low bandwidth. Harvest's popular Wearwolf™ wearable headset solution enables remote workers to communicate directly with technicians, engineers and site managers who may be located across different continents simultaneously in real-time, from the comfort of their offices or homes, so removing the need to travel.

PACC Ship Managers and Satcom Global Extend Partnership with 3-year Aura VSAT Renewal

October 6, 2020 - Singapore based PACC Ship Managers Pte Ltd (PaccShip) has chosen to extend its supply relationship with Satcom Global Ltd, renewing their contract for Aura VSAT for an additional 3-year period. Satcom Global has supported over 50 PaccShip managed vessels with seamless Ku-band connectivity since 2017, with an additional 5 vessels due to join the Aura network later this year. Satcom Global is committed to delivering a maritime VSAT service that delivers reliable connectivity for the lifetime of the customer relationship. The wide range of bandwidth options available all have a Committed Information Rate (CIR), to guarantee performance. In addition, commitment to ongoing improvement of the Aura network, adding new beams and capacity to geographic hotspots and key sailing and trading routes, ensures existing customers continue to enjoy consistent performance, as more vessels join the network. PaccShip is the in-house ship management arm of the PCL Group, managing both PCL owned vessels and those of third parties. The managed fleet comprises dry bulk carriers, multi-purpose vessels, product/ chemical tankers and gas carriers. It employs over 1,500 highly trained seafarers through its representative offices in Beijing, Jakarta, Manila, Kuala Lumpur and London. Satcom Global is delighted to continue its support of the diverse PaccShip fleet with dependable, global connectivity.

RigNet Wins Global Fleet-wide Multi-year Contract

October 5, 2020 - RigNet has been awarded a multi-year contract with another premier offshore drilling company to provide fully managed communications services and global satellite access to its entire global drilling fleet. The new contract expands the already existing services which include RigNet's Machine Learning platform, Intelie, and other over the top applications, intelligence and network security solutions to support the digital transformation of assets in some of the harshest environments imaginable. The new contract will bring together RigNet's global multiband satellite architecture, redundant terrestrial backhails, crew welfare, Advanced Video Intelligence (AVI), and the Machine Learning solutions of Intelie.

Comtech and Gilat Terminate Merger Agreement and Settle Litigation

October 5, 2020 - Comtech Telecommunications and Gilat Satellite Networks announced today that the companies have agreed to terminate the merger agreement first announced on January 29, 2020 and have settled all pending litigation in the Delaware Court of Chancery. In connection with the termination and settlement agreement, Comtech has agreed to make a payment of \$70.0 million to Gilat. The merger termination and the settlement agreement have been approved by each company's board of directors and are effective immediately. The settlement calls for dismissal of the litigation, with prejudice. The trial of the litigation which was scheduled to begin today in Delaware Court of Chancery was accordingly cancelled.

Inmarsat Fleet Xpress to Support Real-time Vessel Surveillance Inland

October 5, 2020 - Inmarsat, the world leader in global, mobile satellite communications, has equipped four Paraná River push boats operated by Impala Paraguay with Fleet Xpress connectivity, in a breakthrough for maritime broadband inland along one of South America's longest waterways. The prime mover vessels are used by Impala Paraguay to steer its fleet of 30 double-hulled barges along the waterway system to move gas oil, jet fuel, gasoline and naphtha products from Argentina onward to Paraguay and Bolivia, exporting soya bean oil in the other direction. Long sections of the transit take place outside the reach of 4G or GSM cellular networks. To date, continuous push boat connectivity has been sustained using Inmarsat's FleetBroadband service, which guarantees connectivity for the modern navigation systems and night operation equipment, as well as the load sensors and GPS position monitoring installed on barges. On average, each push boat consumes around 500GB of data per month for vessel management and crew connectivity. However, the unlimited bandwidth available from Fleet Xpress has proved necessary to support IP (internet protocol) camera surveillance to ensure the safety of crew and the cargo transported by Impala. As part of a three-year Fleet Xpress contract, each push boat is installed with 20 IP cameras connected via onboard antennas, enabling continuous monitoring from Impala Paraguay offices.

Court Approves Sale of OneWeb to the UK Government and Bharti Global

October 2, 2020 - OneWeb, the communications company building a Low Earth Orbit (LEO) satellite constellation to deliver global connectivity, has achieved a major step in its reorganisation process. On 2 October 2020, the United States Bankruptcy Court for the Southern District of New York confirmed OneWeb's Chapter 11 plan of reorganisation, ensuring that the company remains on target to resume full business operations imminently. The Plan details a strong operational foundation for the company to deploy the initial 650 LEO satellite constellation under the new ownership of the UK Government and Bharti Global Limited ("Bharti"). The transactions outlined in the Plan will be implemented following receipt of customary regulatory approvals, which are expected by the end of 2020. In the meantime, OneWeb is resuming operations and readying its commercial services which are planned to start next year.

BROADCAST

SES and CANAL+ Strengthen Partnership with Long-term Extensions across Western Europe, Central Europe and Africa

October 29, 2020 - SES and CANAL+ have signed new long-term strategic agreements for satellite capacity across three geographies, strengthening the companies' longstanding partnership and underlining the importance of satellite in delivering premium content to more than 10 million subscribers. The multi-transponder contract renewal extends SES and CANAL+ relationship to the end of the decade. It enables SES to support the French pay-TV operator in broadcasting its high-quality bouquets to millions of households around the world via 19.2 degrees East, 23.5 degrees East and 22 degrees West. The new contract represents additional secured backlog of over EUR 230 million and includes options for additional capacity and extensions. Partners with SES since 1995, CANAL+ will continue to utilise satellite capacity to broadcast bouquets of channels in ultra high definition (UHD), high definition (HD) and standard definition (SD) for its various businesses to reach over 10 million TV households via SES's orbital positions.

Korean Telecom Leader to Develop Platform for Media Contents Business

October 28, 2020 - KT Corporation, South Korea's largest telecommunications service provider, is strengthening its media contents business through its subsidiaries and affiliates as the company transforms itself into the global platform for the next generation of connectivity, media and technologies. skyTV, KT's media content distribution unit, and global media leader Discovery Networks Asia-Pacific Pte. Ltd. established a joint venture, Studio Discovery, in January to create original contents. The new venture is owned by skyTV with a 30 percent stake and Discovery Networks Asia-Pacific Pte. Ltd. holding the rest. Studio Discovery will start producing original content as the global projects between skyTV and Discovery Networks. The partnership provides KT SkyLife Co., KT's satellite broadcasting subsidiary and the majority shareholder of skyTV, another excellent channel for audiences to enjoy original content at home and abroad. KT SkyLife has been expanding its library since it acquired a 9.9 percent stake in Studio & NEW, a leading content production company in South Korea, in January this year

Media Excel and VUALTO Expand Strategic Partnership in Multiscreen Video Delivery

October 27, 2020 - VUALTO, a leading live and on-demand video streaming and DRM provider, has

announced it is expanding its strategic partnership with Media Excel, a leading provider of multiscreen encoding solutions, to include sales and support services for Media Excel's products in VUALTO's regions of operation. The new phase of the partnership enables UK and EU multiscreen operators and service providers to obtain timely access to expert consultation and 24x7 support for Media Excel's entire product portfolio. VUALTO is also able to coordinate demo units and training sessions for Media Excel's HERO Live and VOD encoding/transcoding solutions. Media Excel's teams in North America and Asia remain available and accessible for support or inquiry escalations as needed. This development further strengthens the collaborative relationship the two companies have nurtured for over 10 years, as Media Excel's HERO Live and VOD encoding/transcoding product portfolio is tightly integrated within VUALTO's orchestration, video delivery and monitoring solution (VUALTO CONTROL HUB). The integration spans across all combinations of form factors (on premise, virtual and cloud) and video workflows (Live, VOD, Live2VOD, VOD2Live). Together the two companies have delivered several high-profile projects across EMEA, such as European Parliament, Bowtie TV, VRT and many more.

ATEME TITAN powers TVUp OTT services

October 22, 2020 - ATEME, the leader in video delivery solutions for Broadcast, Cable TV, DTH, IPTV and OTT, today announced that TVUp, a Spain-based TV company running business in Spain & Latam, has implemented its TITAN Live transcoding solutions. TVUP has created a PayTV as a service OTT platform with premium channels and content for both Spanish and international markets (B2B2C), running via an Android TV set-top-box as the main device. The TVUp platform offers users access to its own TV platform and channel bouquet, "Tivify", and a wide variety of content through the Play Store, including YouTube, Spotify, Disney+, HBO, Amazon Prime and DAZN. Meanwhile, it provides the necessary infrastructure for small operators to launch TV services in a fast and reliable way, while allowing them to stay focused on their businesses.

Eutelsat's HOTBIRD Selected by Kabelio for New Swiss HD Platform

October 15, 2020 - Eutelsat Communications' HOTBIRD video neighborhood has been selected by Switzerland's Kabelio AG for the launch of a new Swiss direct to home HD platform. This multi-year contract will enable Kabelio to leverage the unparalleled reach of Eutelsat's premier hotspot to launch a service targeting Swiss audiences both at home and throughout Europe. Launched mid-October, Kabelio's new line-up features both domestic and international channels, and includes 34 premium TV channels in HD quality including entertainment, sport, news and documentaries, supplemented by a range of free-to-air channels in various European languages.

A1 Telekom Austria Group and TRACE Global Inking New Strategic Partnership in Asia and Europe

October 8, 2020 - The music & lifestyle media house, TRACE, has chosen A1 Telekom Austria Group to be its main technical distribution and contribution provider in the Asian market. A1 Telekom Austria Group will deliver the high quality TV channels TRACE Urban and TRACE Sport Stars to cable and IPTV operators within the wide footprint of the APSTAR-7 satellite at 76.5° East. Both channels are available in HD quality for its viewers in Asia Pacific, Australia and partially Africa. A1 Telekom Austria Group is also going to include the music channels in some of its subsidiaries in Europe. A1 Telekom Austria Group provides end-to-end technical broadcasting services to numerous TV channels & pay TV operators in the European, Asian and the U.S. markets directly from its teleport Aflenz, located in Austria. TRACE TV channels are distributed in 162 countries via 220 carriage deals with leading cable, satellite, DSL, mobile and OTT operators and are available on 27 satellites.

ATEME'S TITAN Live Enables FASTWAY to Launch New OTT and IPTV Platform in India

October 8, 2020 - ATEME, the leader in video delivery solutions for broadcast, cable TV, DTH, IPTV and OTT, today announced that FASTWAY, which offers subscribers cutting edge digital TV service across multiple markets in India, has chosen to implement ATEME's TITAN Live solution for its new Next Gen OTT and IPTV platform, providing an ultra-viewing experience for audiences. As the fastest growing broadband service provider in region, FASTWAY's recently launched Next Gen OTT and IPTV platform to complement its existing cable service offering which already provides over 450 digital channels. ATEME's TITAN Live is being used to encode and transcode channel video headends and deliver a high-quality OTT and IPTV experience to FASTWAY's customers.

Rocket Lab Successfully Launches 15th Mission, Deploys Satellites for Planet, Canon Electronics

October 29, 2020 - Rocket Lab has successfully launched its 15th Electron mission and deployed Earth-imaging satellites for Planet and Spaceflight Inc. customer Canon Electronics. The mission was Rocket Lab's fifth for this year, making Electron the second-most frequently flown U.S. launch vehicle in 2020. The 'In Focus' mission launched from Rocket Lab Launch Complex 1 on New Zealand's Māhia Peninsula at 21:21 UTC, 28 October 2020. The Electron launch vehicle successfully deployed ten commercial small satellites to a 500km circular orbit, bringing the total number of payloads deployed by Rocket Lab to 65. The payloads on 'In Focus' included the latest flock of Planet's Earth-imaging SuperDove small satellites, each integrated with and deployed from Rocket Lab's Maxwell satellite dispensers. Flock 4e' bolsters Planet's constellation of Earth-observation satellites already on orbit providing medium-resolution global coverage and near-daily revisit. Canon Electronic's mission objective with their CE-SAT-IIB microsatellite is to demonstrate the company's Earth-imaging capability with a middle-size telescope equipped with an ultra-high sensitivity camera to take night images of the Earth and small size telescopes suitable for CubeSat use.

Maxar Selected by U.S. Space Force to Develop Prototype Mission Data Processing Applications

October 29, 2020 - Maxar Technologies announced that it was selected by the U.S. Space Force to develop prototype mission data processing applications for the Future Operationally Resilient Ground Evolution Mission Data Processing (FORGE MDP) program located within the Cross-Mission Ground & Communications Enterprise at the Space & Missile Systems Center. Maxar's prototype applications will provide rapid mission data processing and dissemination services for Overhead Persistent Infrared (OPIR) data from the Space-Based Infrared System (SBIRS) satellites. The contract is valued at \$8.5 million over 12 months and was awarded through the Space Enterprise Consortium, managed by Advanced Technology International. The U.S. Space Force is responsible for processing and managing increasingly large amounts of data from its satellite constellations. FORGE MDP will modernize and streamline the existing ground system into an architecture that is open, scalable, modular and resilient to meet next-generation mission requirements and exploit data from future satellite constellations. As an essential component of FORGE MDP, Maxar's applications rapidly process satellite data to provide missile warning and other mission-critical notifications. To create its solution, Maxar assembled an experienced team of industry-recognized technical and programmatic experts in OPIR data processing, distributed tracking and data fusion and UI development, which includes Numerica, Sandia National Laboratories and the University Corporation for Atmospheric Research.

UAE Announces Second Satellite To Be Built By An All-Emirati Team

October 28, 2020 - His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, has announced a new satellite project called the MBZ-SAT, which will become the second Emirati satellite to be fully developed and built by a team of Emirati engineers after the KhalifaSat. To be developed at the Mohammed Bin Rashid Space Centre (MBRSC) in Dubai, the MBZ-SAT is expected to be launched in 2023, making it the most advanced commercial satellite in the region in the field of high-resolution satellite imagery. The new satellite was named after His Highness Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, by His Highness Sheikh Mohammed bin Rashid Al Maktoum. Bearing the initials of HH Sheikh Mohamed bin Zayed, the MBZ-SAT is yet another national achievement that strengthens the UAE's position in the field of space science.

NorthStar Building World's First Satellite Constellation to Combat Imminent Threat of Space Collisions

October 27, 2020 - NorthStar Earth & Space has contracted Thales Alenia Space (TAS) to build the first three satellites of its debut "Skylark" constellation for Space Situational Awareness (SSA) services, with Seattle, WA's LeoStella overseeing the final assembly. With commercial space en route to a forecast \$2.7 trillion industry, new satellites and planned mega-constellations are launching into an environment dangerously congested with traffic and space debris. NorthStar's Skylark constellation services are designed to revolutionize the safety of spaceflight. NorthStar is the first commercial service to monitor space, from space, via a constellation of satellites with dedicated optical sensors. With a secure data-driven 3D catalogue of the entire space environment powered by advanced SSA analytics, NorthStar will deliver timely and precise Space Traffic Data, Collision Avoidance and Navigation Services to the global satellite community. NorthStar's investors comprise a global coalition of strategic partners, including Telesystem

Space (a co-enterprise of the Sirois family office, Telesystem and the Roger's Family Trust of Canada), the Space Alliance (Thales Alenia Space and Telespazio) of Europe, KinetX (USA), the Government of Quebec and the Government of Canada.

Momentus Announces Service Agreement for Gran Systems NUTSAT

October 26, 2020 - Momentus and Gran Systems today announced a service agreement for Gran System's 2U CubeSat NUTSAT to fly on Momentus' December 2020 Vigoride demo mission. The 2U NUTSAT was designed by the National Formosa University with the backing of the National Space Organization (NSPO) in Taiwan. One of the three NSPO cubesats launching this year, NUTSAT is a systems engineering training education program integrating an ADS-B receiver onto the cubeSat to demonstrate and enhance commercial aviation safety technology. NUTSAT is the first of the three cubesats to go for the launch integration. As the 2nd longest heritage new space company in Taiwan, Gran Systems serves as a think tank, angel investments, system integration company involved in new space, semiconductor equipment, and medical equipment industries. It is a National Space Organization (NSPO) supplier for cubesat launch services, and the Taiwan and South East Asian space gateway company for the International Space Station with partnering companies.

SpaceX Launches 100th Rocket in Landmark Milestone, Fuelling the Road to Rocket Reusability

October 26, 2020 - On Saturday, October 24 at 11:31 a.m. EDT, 11:31 UTC, SpaceX's Falcon 9 rocket launched 60 Starlink satellites to orbit from Space Launch Complex 40 (SLC-40) at Cape Canaveral Air Force Station in Florida. Falcon 9's first stage previously supported the GPS III Space Vehicle 03 mission in June 2020 and a Starlink mission in September 2020. Following stage separation, SpaceX landed Falcon 9's first stage on the "Just Read the Instructions" droneship, which was stationed in the Atlantic Ocean. The Starlink satellites deployed approximately 1 hour and 3 minutes after liftoff. This mission also marked the 100th successful flight of a Falcon rocket since Falcon 1 first flew to orbit in 2008. SpaceX believes that fully and rapidly reusable rockets are the pivotal breakthrough needed to dramatically reduce the cost of access to space to enable people to travel to and live on other planets. While most rockets are expendable after launch – akin to throwing away an airplane after a one-way trip from Los Angeles to New York – SpaceX is working toward a future in which reusable rockets are the norm. Of its now 100 successful flights of Falcon rockets, SpaceX has landed a Falcon first stage rocket booster 63 times and re-flown boosters 45 times. This year, SpaceX twice accomplished the sixth flight of an orbital rocket booster. And, in the ten years since its demonstration mission, Falcon 9 has become the most-flown operational rocket in the United States, overtaking expendable rockets that have been launching for decades.

Start of the Production of the Skylark Constellation

October 26, 2020 - Thales Alenia Space has signed the first phase of a contract with NorthStar Earth and Space Inc., the Canadian space-based information services company, to start the development and production of the first three smallsat satellites that are part of the world's first and most advanced commercial space-based environmental and near-space monitoring system. In November 2018, the Space Alliance, formed by Telespazio and Thales Alenia Space announced to have taken a stake in NorthStar Earth and Space. Today, the industrial journey begins for the Skylark constellation, with Thales Alenia Space being responsible for the space system activities by providing the payloads alongside with LeoStella (a joint venture between BlackSky and Thales Alenia Space) providing the satellite platform and the assembly, integration and test facilities based in Tukwila for final assembly and delivery. The Skylark smallsats will be based on LeoStella's LEO-100 Multi-Mission Bus and a compact optical instrument.

LeoLabs Partners with SpaceX to Track Starlink Satellite Deployments

October 26, 2020 - LeoLabs announced a commercial agreement with SpaceX to support tracking of Starlink satellites during the initial on-orbit phase of missions. Under this partnership, SpaceX utilizes LeoLabs Launch and Early Orbit service to track all Starlink satellites beginning immediately after deployment, providing SpaceX with rapid orbital location and identification support during the first few days of new missions. Use of LeoLabs' independent tracking system is a responsible best practice by SpaceX to provide redundancy during the early mission phase and ensure mission success. LeoLabs data supports rapid independent confirmation of events so the SpaceX team can focus on satellite operations. Using the LeoLabs global network of phased-array radar systems, we schedule and actively track every SpaceX mission with Starlink satellites on board, beginning with the first radar pass following satellite deployment from the Falcon 9 upper stage. LeoLabs tracks all Starlink satellites (up to 60 per launch) and rapidly generates data products on the front and back of the cluster to provide a bounding box on the train of satellites. This begins within the first few hours following launch and deployment.

China Launches New Remote-sensing Satellites

October 26, 2020 - China successfully sent a group of new remote-sensing satellites into orbit from the Xichang Satellite Launch Center in southwest China's Sichuan Province on Monday. Belonging to the Yaogan-30 family, the satellites were launched by a Long March-2C carrier rocket at 11:19 p.m. (Beijing Time). The satellites have entered the planned orbits and will be used for electromagnetic environment detection and related technological tests. Also on board the rocket was a satellite belonging to the Tianqi constellation. The satellite, Tianqi-6, will be used for data transmission. The Tianqi constellation, developed by a Beijing-based high-tech company, is for short-message communications. It was the 350th mission of the Long March rocket series.

All Solid Motors for Vega-C Complete Qualification Tests

October 23, 2020 - Europe's new-generation Vega-C small launch vehicle developed by ESA will increase performance and extend current launch capabilities at Europe's Spaceport. The solid rocket motors built for Vega-C under contract to Avio have all completed the hot fire tests to qualify them for flight. The first stage P120C, second stage Zefiro-40 and the third stage Zefiro-9 are all fueled by solid propellant. These motors, together with the AVUM+ liquid propulsion upper module, will allow Vega-C to lift payloads of up to 2300 kg to a reference 700 km altitude in polar orbit. The P120C first stage will burn for 130 s using 142 t of fuel to deliver a liftoff thrust of about 4500 kN. This will take Vega-C to an altitude of about 60 km in the first phase of flight before the second stage takes over. Europropulsion, owned jointly by Avio and ArianeGroup, built three P120C models for test. One development and two qualification models have all been static fired successfully at Europe's Spaceport. The first qualification model, in the Vega-C configuration, was hot fired in January 2019. The second qualification model, in the Ariane 6 configuration, was hot fired on 7 October. Using the P120C on two launch vehicles has saved on development costs and benefitted economies of scale and created an opportunity for Europe to scale up production. Vega-C's second stage, powered by the new Zefiro-40 contains about 36 t of solid propellant. The Zefiro-40, developed and manufactured by Avio in their Colleferro factory in Italy, was static fired on 8 March 2018 and then again on 10 May 2019 at test facilities in Sardinia.

Axelspace Launches Business Continuity Plan Support Service, Using Satellite Data

October 23, 2020 - Axelspace has announced the launch of business continuity plan (BCP) support service to conduct timely situational analysis in response to accidents and natural disasters, utilizing satellite imagery data. In preparation for the occurrence of incidents, including unexpected events and accidents, BCP support service will periodically monitor the designated areas by capturing satellite imagery data. It allows us to take immediate control of the crisis situation, verify the situation of target assets and the surrounding environment in a confidential manner, by conducting emergency capturing based on predetermined terms. In addition, monitoring of the current situation and verification of the surrounding environment during the recovery phase is made possible, without going to the actual location, because of periodic monitoring prior to the occurrence of the incident.

SPAINSAT NG Programme Successfully Passes Preliminary Design Review (PDR)

October 22, 2020 - The SPAINSAT NG programme, owned and operated by Hisdesat, has successfully passed the preliminary design review (PDR) of the payloads and the full satellite, including PDR of Pacis 3 elements. SPAINSAT NG is being manufactured by a consortium of four co-primers from Airbus in Spain and France, and Thales Alenia Space in Spain and France. This important milestone confirms the soundness of the preliminary design and technical capabilities of the SPAINSAT NG satellite system. It was achieved in the expected timeframe despite the difficulties caused by the Covid-19 health crisis, thanks to the commitment of all project teams who have continued to work at full capacity, combining remote work with face-to-face activity in the workplace. The SPAINSAT NG programme comprises two satellites, SPAINSAT NG I and II which will be situated in different geostationary positions to operate in X, military Ka and UHF bands.

Singapore Startup Zero Error Systems (ZES) Joins Airbus Ventures Portfolio

October 21, 2020 - Airbus Ventures announces its latest investment in Zero Error Systems (ZES), a Singapore-based startup debuting "smart chip" technology powered to protect satellites from radiation damage. The \$2.5 million seed round will enable the company to scale its operations, and work with international customers to deploy its products into space, as well as explore new applications, including self-driving vehicles with high levels of autonomy. Developed at Singapore's Nanyang Technological University, ZES's novel design, with the capability to detect harmful heavy-ion radiation, has already been installed in three pico-satellites built by the Kyushu Institute of Technology in Japan. This announcement

comes on the heels of Airbus Ventures unveiling its milestone partnership with the Development Bank of Japan Inc. (DBJ), Mitsubishi UFJ Lease & Finance Company Limited (Mitsubishi UFJ Lease) and Fuyo General Lease Co., Ltd. (FGL) to invest in Airbus Ventures Fund III LP, representing a joint and still-expanding mission to support early-stage businesses in their ascent from the ground to deep space. ZES expects the first launch of its chips into orbit in 2021.

Kepler Communications Awards Service Agreement to Momentus

October 20, 2020 - Momentus and Kepler Communications have signed a launch service agreement to deploy two additional satellites for Kepler's GEN1 constellation in 2021. Momentus' rideshare service will include launch provisions and delivery to the customer's desired orbital altitude while maintaining the SSO inclination using Momentus' Vigoride transfer vehicle. The GEN1 platform supports both Kepler's Global Data Service, a wideband high-capacity data service, and EverywhereIoT, a narrowband solution for Internet of Things applications. With deployment beginning in late 2020, Kepler's GEN1 constellation is the first to offer both wideband and narrowband services from LEO. The two new satellites will deliver additional commercial capacity for Kepler's Global Data Service and provide additional support for ongoing technology demonstrations for EverywhereIoT. For communications and IoT satellites, the Local Time of the Ascending Node (LTAN/LTDN) is important in terms of offering fleet coverage diversity so that a satellite operator can offer data and analytics over a variety of times. Once in orbit, Momentus' Vigoride transfer vehicle can change the LTAN/LTDN of a spacecraft deployed by using precession – a change in the orientation of the rotational axis of a rotating body. Kepler will be a prominent customer for Momentus' LTAN shift service as they build out their constellation.

mu Space Successful Sent Payload to Space

October 20, 2020 - mu Space successful launch of payload into space with Blue Origin's New Shepard on October 13. A Payload that mu Space and TOT improved incorporates a wide scope of electronic devices and sensors for watching and estimating closely in microgravity. Other than the Payload of TOT, mu Space also delivers its own experimental equipment, including partner's experiment such as DNA experiment from Spaceth.co, a group of teenage and young scientists. This payload flew on-board Blue Origin's New Shepard space vehicle. The New Shepard vertical takeoff and vertical landing vehicle is capable of carrying hundreds of pounds of payloads per flight and will ultimately carry up to six astronauts to altitudes beyond 100 kilometers, also known as the Karman Line, the internationally-recognized boundary of space.

Nokia Selected by NASA to Build First Ever Cellular Network on the Moon

October 19, 2020 - NASA) Nokia has been named by NASA as a partner to advance "Tipping Point" technologies for the Moon, deploying the first LTE/4G communications system in space and helping pave the way towards sustainable human presence on the lunar surface. Nokia Bell Labs' pioneering innovations will be used to build and deploy the first ultra-compact, low-power, space-hardened, end-to-end LTE solution on the lunar surface in late 2022. Nokia is partnering with Intuitive Machines for this mission to integrate this groundbreaking network into their lunar lander and deliver it to the lunar surface. The network will self-configure upon deployment and establish the first LTE communications system on the Moon. The network will provide critical communication capabilities for many different data transmission applications, including vital command and control functions, remote control of lunar rovers, real-time navigation and streaming of high definition video. These communication applications are all vital to long-term human presence on the lunar surface.

The Ariane 6 Engines Are Now Ready

October 15, 2020 - With the successful final qualification of the P120C at the European Spaceport (CSG) in Kourou on October 7, the qualification models of three engines for Ariane 6 have now all been tested successfully. The solid-propellant P120C rocket will equip Ariane 62 (Ariane 6 in its configuration with two strap-on boosters) and Ariane 64 (four strap-on boosters) as well as the first stage of the Vega-C launcher. This third and last successful test of the solid propellant P120C rocket, in the Ariane 6 configuration, paves the way for final qualification of the P120C by the European Space Agency (ESA). Additionally, this last engine test was also the first "system" test of the booster for the new European launcher, which features a nozzle controlled by electric jacks powered by thermal cells (a world first in ignition by laser and optical fiber). The same test also validated the interactions between "ground" infrastructures and "on-board" equipment thanks to a new technology communication bus. The Vulcain 2.1 core stage liquid propulsion engine, which produces a thrust of 140 metric tons (1,370 kN) have completed qualification tests in July 2019. The Vinci upper stage re-ignitable engine, with its 18 metric tons of thrust (180 kN), completed its qualification tests in October 2018. Ariane 6 is a program managed

and funded by the European Space Agency for which ArianeGroup is design authority and industrial prime contractor. ArianeGroup is responsible for development, production with its industrial partners and operations via its subsidiary Arianespace. The French space agency CNES is responsible for construction of the launch pad in Kourou, French Guiana.

German Aerospace Centre, DLR, Sign a Cooperation Agreement with Australia's Southern Launch

October 15, 2020 - Building on the MOU that was previously signed between DLR – Space Operations and Astronaut Training and Southern Launch on 26 March 2020, the organisations have now signed a Cooperation Agreement further enhancing the relationship. The Cooperation Agreement aims to implement joint civilian research activities in the field of suborbital and orbital space launch, especially in the field of reusable launch vehicles (RLV). Working together on such activities is a major step towards further developing Southern Launch's capabilities and launch sites to conduct safe and economically affordable rocket launches. A notable spin-off from the agreement is that the organisations will work to establish an educational sounding rocket program in Australia, allowing universities to undertake space-based research projects from the Southern Hemisphere. The signing of the agreement follows the successful launch of two space capable rockets by Southern Launch at the Koonibba Test Range, both completed on 19 September 2020. DLR are looking into the feasibility of utilising Southern Launch's Koonibba Test Range for the testing of new rocket technologies and launch equipment, in line with DLR's efforts to research and develop future reusable launcher technologies. Together DLR and Southern Launch are working towards a launch date of the first DLR research mission in mid-2022.

Thales Alenia Space on its Way to Reach the Moon

October 14, 2020 - Thales Alenia Space will develop two key modules for the upcoming Lunar Orbital Platform-Gateway (LOP-G): I-HAB (International Habitat) and the ESPRIT communications and refueling module. These two modules are the European contribution for this Gateway. The first tranche of I-HAB contract, (worth 36 million euros, the global amount being 327 million euros), has been signed with the European Space Agency (ESA), while ESPRIT development has already started under Authorization To Proceed (ATP) with a contract signature expected by the end of the year. This Gateway, a manned lunar orbital infrastructure, is one of the pillars of NASA's Artemis program, designed to return humans to the Moon by 2024. It is being implemented through international cooperation, currently involving NASA (United States), ESA (Europe), JAXA (Japan) and CSA (Canada) with each partner in charge of the development of complementary elements, to be assembled and operated in lunar orbit as from 2024. The station, weighing about 40 metric tons, will be automatically assembled piece by piece in a near rectilinear halo orbit (NRHO) around the Moon. The final configuration is still partly under final consolidation, but it will mainly comprise habitation modules for the crew offering as well docking capabilities for visiting vehicles and the Orion space capsule, logistics modules, communications with the Earth and Moon, EVA airlocks for scientific experiments and crew extravehicular activities (EVA), as well as a robotic arm. It is not intended for permanent occupancy, but will be able to host 4-person crews for periods of one to three months. Gaining new experiences on and around the Moon will prepare NASA to send the first humans to Mars in the coming years, and the Gateway will play a vital role in this process.

Telesat U.S. Services Awarded DARPA Contract for Blackjack Track B Research, Development and in-Orbit Demonstration with Telesat LEO

October 14, 2020 - Telesat U.S. Services, LLC has been awarded a contract by DARPA (Defense Advanced Research Projects Agency) for the development and in-orbit demonstration of commercial low-Earth-orbit (LEO) spacecraft buses in a LEO constellation network with robust low-latency communications features as part of DARPA's Blackjack program. Following Telesat's initial 2018 contract for system engineering and interface definition under the Blackjack Phase 1 program, Telesat U.S. Services will develop and demonstrate the Blackjack Phase 2/3 Track B technology, including in-orbit testing the capabilities of Optical Inter-Satellite Links (OISLs). As part of Phase 2, Telesat U.S. Services will deliver two spacecraft buses to DARPA in less than one year for a "risk reduction" flight to test OISL communications with government payloads in orbit and to demonstrate OISL interoperability with different hardware. The Phase 2 base contract represents an \$18.3 million program for Telesat U.S. Services. Subsequently, additional Telesat LEO spacecraft may be procured to fully populate the Blackjack constellation, which represents a total contract value of up to \$175.6 million if all options are exercised. The Blackjack program is a demonstration of LEO satellites in hybrid commercial- government constellations offering highly resilient space systems, global persistence, low latency communications and rapid technology refresh.

Swedish Space Corporation to Launch Satellites from Esrange Space Center

October 14, 2020 - The Swedish government announced a decision to establish capability to launch small satellites from Esrange Space Center in northern Sweden. The announcement is the third step in an extensive modernization of the infrastructure at Esrange to meet the growing demand of testing and launching capability in the space sector and was made today by the Swedish Space Minister Matilda Ernkrans during the inauguration of a new testbed facility for next generation rocket technology at Esrange. Esrange Space center is already one of the most active and versatile launch sites in the world and the latest decision allows SSC to proceed with its goal to be able to launch small satellites into orbit by 2022. Today's announcement follows the overall ambition defined in the Swedish space strategy decided upon in 2018. The strategy underlines the importance of further developing Esrange in order to fully utilize its potential, strengthening Sweden's position as a prominent space nation within the European and global space sector. The new testbed at Esrange provides a platform for European and global space sector to develop next generation rocket technologies. This will now be supplemented with additional infrastructure needed for launching small satellites from Esrange. The first rockets tests will be conducted by ISAR and RFA later this autumn, both already established at the site. The European Space Agency's reusability programme Themis will conduct its first reusability test flights in 2022 from Esrange, in a collaboration between SSC and ArianeGroup supported by ArianeWorks (an innovation unit formed up by the French Space Agency CNES and ArianeGroup). SSC's ambition is to launch the first satellites in 2022.

Thales Alenia Space Selected by Airbus as Partner to the Mars Sample Return Mission

October 14, 2020 - Thales Alenia Space has signed an Authorization To Proceed (ATP) with Airbus Defence and Space, prime contractor of the program, to contribute to the Earth Return Orbiter (ERO), the key element of the Mars Sample Return (MSR) Mission, which will be carried out through an international cooperation led by NASA. A first tranche, worth around €11 million, will be related to the B2 phase for a global contract value of around €130 million. Thales Alenia Space will be responsible for: supplying the Communication System, consisting of the elements allowing the data transmission between Earth and ERO and Mars; designing the crucial Orbit Insertion Module (OIM) and related thermo-mechanical, propulsion and electrical architectures; the Assembly Integration and Test (AIT) phase for the Proto-Flight model of the ERO Spacecraft composing elements in its test facilities of Turin and Toulouse. The Earth Return Orbiter spacecraft is composed by the Return Module and the Orbit Insertion Module. The Return Module (RM) hosts the NASA payload devoted to the capture of the Martian samples orbiting around Mars, of their containment and delivery to Earth. The Orbit Insertion Module (OIM) is an additional chemical propulsive stage, for inserting the spacecraft into Mars orbit. This module is crucial as he will allow to reduce the spacecraft velocity enabling the Martian gravity to capture ERO in a stable orbit. After the maneuver successfully completed, IOM will be separated from RM in order to save mass prior to the return to Earth.

Arianespace Offers New Shared Smallsat Payload Opportunities on its Vega Launcher

October 13, 2020 - Arianespace today announced that new shared payload opportunities to low Earth orbit (LEO) have been opened with its Vega launcher's Small Spacecraft Mission Service (SSMS). For the next launch opportunity – Vega Flight VV18, targeted for the first quarter of 2021 – five companies already have signed contracts for payload slots, thereby fully booking the capacity on this mission. The initial SSMS launch with Vega – Flight VV16 – was performed last month, fully proving the viability of Arianespace's latest capability for orbiting small satellites. This inaugural SSMS launch was supported by the European Space Agency and the European Union, deploying 50-plus satellites for 21 commercial and institutional customers. With the SSMS' successful introduction, Arianespace is now able to offer a regular launch service for small satellites (mass under 400 kg). Customers will benefit from the highly modular payload carrying systems available on the current Vega and the enhanced Vega C version, along with the reignition capability of the launchers' AVUM upper stage, as well as the new small spacecraft preparation and integration facilities in Europe that complement existing installations at the Guiana Space Center in French Guiana. Vega C maiden flight is schedule for mid-2021.

New Shepard Successfully Completes Mission with NASA Precision Lunar Landing Technology Onboard

October 13, 2020 - Blue Origin successfully completed the 13th New Shepard mission to space and back, and the 7th consecutive flight for this particular vehicle, a record. Catch the mission webcast replay on Blue Origin's YouTube page. There were 12 payloads onboard including the Deorbit, Descent, and Landing Sensor Demonstration under the NASA Tipping Point partnership. The lunar landing sensor demo was the first payload to be mounted on the exterior of a New Shepard booster and tested technology designed to achieve high accuracy landing. This will enable long-term lunar exploration, as well as future Mars

missions.

Space Flight Laboratory (SFL) Announces Launch of Two Satellites

October 9, 2020 - Flight Laboratory (SFL), a developer of 52 distinct small satellites over 22 years, has announced the launch of the Kepler-4 and Kepler-5 CubeSats. These two satellites, benefit from the extensive flight heritage possessed by SFL. Additionally, SFL played an instrumental role in the development of the production workflow at Kepler that will enable Kepler to produce additional satellites to deliver the GEN1 constellation. The two 6U-XL CubeSats were launched September 28, 2020, aboard a Soyuz-Fregat launch vehicle from the Plesetsk Cosmodrome in Russia. Within hours of launch, both satellites were in communication with Kepler ground control and were functioning as planned. Kepler-4 and -5 are the first service-focused CubeSats in Kepler Communications' constellation that will ultimately include 140 satellites. SFL developed Kepler-4 in concert with Kepler, which is based on SFL's new SPARTAN 6U-XL CubeSat design, with mass production in mind. As Kepler-4 was in production, SFL personnel provided training and technical support to Kepler in creating the manufacturing workflow capable of assembling and integrating the additional satellites at a 5,000-square-foot facility adjacent to Kepler headquarters in Toronto.

China's Tianwen 1 Takes Selfies en Route to Mars

October 9, 2020 - The China National Space Administration (CNSA) released mid-flight images of Mars probe Tianwen 1 as the country's National Day coincided with the Mid-Autumn Festival on Thursday. Tianwen 1 reports safety to the motherland and sends its best birthday wishes, said the CNSA in a press release. The images showed China's five-star red flag dazzling with the golden orbiter and the silver lander and rover in the darkness of the universe. The flag on Tianwen 1, weighing about 144 grams, is about 39 cm by 26 cm in dimension, slightly smaller than a piece of A3 paper. It is sprayed onto the probe with special materials and overprint technology, the CNSA said. It is the first time that Tianwen 1 took selfies. The images were captured by a separating measurement sensor installed on the outer wall of Tianwen-1. With commands from ground control on Earth, the sensor separated from Tianwen-1 and took one picture every second with its two wide-angle lenses. The images were sent to Tianwen 1 via Wi-Fi and then dispatched to Earth. As of midnight Wednesday, Tianwen 1 has flown about 188 million km and is currently 24.10 million km away from Earth. All probe systems are in good condition. China launched the Mars probe on July 23. It was designed to complete orbiting, landing and roving in one mission. The probe is expected to reach the red planet around February 2021. The probe has successfully captured a photo of Earth and the moon, and completed mid-course orbital correction twice and self-check on multiple payloads.

Exolaunch Signs Long-term Launch Agreement with SpaceX for Multiple Rideshare Missions

October 8, 2020 - Exolaunch has signed a long-term launch agreement with SpaceX to secure Falcon 9 capacity for launching small satellites as part of SpaceX's SmallSat Rideshare Program. Under the agreement, Exolaunch manifests multiple microsatellites and cubesats on Falcon 9 rideshare missions to a sun-synchronous orbit throughout 2020 - 2021. Exolaunch is accommodating 30 small satellites on the first SpaceX dedicated rideshare mission scheduled for launch this December, and is gearing up for its launch campaign next month at the SpaceX launch facility at Cape Canaveral, Florida. Additionally, Exolaunch is planning to open an office in the U.S. to provide more flexible launch and deployment services to its growing list of stateside customers.

D-Orbit Announces Launch Service Contract with AAC Clyde Space

October 8, 2020 - Italian in-orbit transportation company D-Orbit has announced a launch service agreement with Swedish-British small satellite manufacturer AAC Clyde Space. The contract covers launch and deployment of two Eutelsat LEO for Objects (ELO) 6U CubeSats in 2021 developed and built by AAC Clyde Space. Eutelsat's ELO is a constellation that aims at providing global Internet of things (IoT) coverage from low Earth orbit to support sectors like transport, oil and gas, and agriculture. The constellation, in combination with ground infrastructures, will enable companies to gather data from tens of millions of objects, irrespective of their geographic location. According to the agreement, D-Orbit will launch and deploy the two AAC Clyde Space' satellites on two separate missions. Taking full advantage of the versatility of D-Orbit's launch service, each mission will be tailored according to the customers' requirements in matter of timing and deployment, using either the company's proprietary deployers or ION Satellite Carrier, a spacecraft designed to transport a combination of small satellites to space and release them one by one in different orbital slots, after changing altitude, inclination, and RAAN before each release, according to customers' needs.

Spaceflight Signs Multi-launch Agreement with HawkEye 360

October 7, 2020 - Spaceflight Inc. today announced it signed a Multiple Launch Services Agreement (MLSA) with HawkEye 360. Under the agreement, Spaceflight will provide capacity, engineering, and mission management services to launch HawkEye 360's Cluster 4, 5, and 6 of its radio frequency mapping satellites. Each cluster in the constellation consists of three approximately 30 kg microsats which fly in a unique formation to gather a wide variety of geolocation data. HawkEye 360 first worked with Spaceflight in 2018, successfully launching its first cluster of spacecraft aboard Spaceflight's record-breaking SSO-A mission, the first fully dedicated rideshare mission with 64 smallsats aboard a Falcon 9. HawkEye Cluster 2, which features even more powerful satellites that can geolocate multiple signals simultaneously, is scheduled to launch with Spaceflight on its SpaceX Rideshare-3 (SXR3-3) mission via the Sherpa-FX orbital transfer vehicle on a Falcon 9, no earlier than December 2020.

Northrop Grumman Launches 14th Cargo Delivery Mission to the International Space Station

October 2, 2020 - Northrop Grumman has successfully launched the company's Cygnus cargo resupply spacecraft, the S.S. Kalpana Chawla, to the International Space Station. After the nine minute ascent, the S.S. Kalpana Chawla, named for the first woman of Indian descent to fly in space, was deployed into orbit. Approximately two and a half hours later, the vehicle's Ultra-flex solar arrays successfully deployed, and the spacecraft is currently operating nominally. Cygnus is scheduled to be grappled by the crew on the International Space Station on Oct. 5 at approximately 5:20 a.m. EDT. Northrop Grumman solves the toughest problems in space, aeronautics, defense and cyberspace to meet the ever evolving needs of our customers worldwide. Our 90,000 employees define possible every day using science, technology and engineering to create and deliver advanced systems, products and services.

Momentus to Launch Australia's Skykraft and France's MECANO ID to Deploy a Microsatellite Constellation Pathfinder

October 2, 2020 - Momentus announced a launch service agreement for deploying Skykraft's microsatellite on Vigoride's mission in June 2021. Skykraft's spacecraft is a pathfinder for a future large LEO constellation, and will be deployed via a new separation ring named EOS and developed by MECANO ID under a CNES contract thanks to the partial financing of the Future Investment Plan. The launch service agreement between Skykraft and Momentus provides for another microsatellite launch in late 2021, part of an accelerated demonstration program of four successive satellite iterations ahead of the launch of Skykraft's Space Based Air Traffic Management constellation in 2023. Skykraft is an Australian space company that specializes in the conceptualization, design, manufacturing and operations of smallsat constellations for the delivery of space-based global services. Skykraft's satellite will validate space-based VHF communication and demonstrate key technologies such as deployable antennas - paving the way for the 210-satellite Skykraft constellation poised to commence operations from 2023. MECANO ID is a French company specialized in developing mechanical and thermal-dominated systems subjected to harsh environments, mainly dedicated to the space environment. Building on 25 years of successful space projects, MECANO ID is now developing the high-precision deployer EOS for nanosatellites and microsatellites. Characterized by light-weight and low-spin deployment, EOS offers unparalleled ease of integration and access thanks to its fully axisymmetric design and customizable interfaces. The June 2021 mission with Skykraft and Momentus constitutes the flight qualification for EOS and opens the door for commercialization.

Boeing to Develop Next-generation Satellite System for U.S. Space Force

October 1, 2020 - Boeing has received one of three development contracts to build a satellite payload prototype and develop a new secure, resilient satellite communications architecture for the U.S. Space Force's Evolved Strategic SATCOM (ESS) program. ESS will be a military satellite communications (MILSATCOM) system. It is a critical component of the U.S. Space Force's strategy. The initial ESS development contract is valued at \$298 million. Contracts for the full ESS system are expected to be awarded in 2025. Boeing's support of the U.S. government's SATCOM mission spans six decades and has since included programs that span air, land and space domains. The company's secure MILSATCOM programs include extremely high-frequency payloads, the Wideband Global SATCOM constellation, the Protected Tactical Enterprise Service and Protected Tactical SATCOM program, which deliver survivable, secure and resilient communications to the U.S. military and its allies.

EXECUTIVE MOVES

Speedcast's James Trevelyan to Join the Board of Space & Satellite Professionals International

October 20, 2020 - Space & Satellite Professionals International (SSPI) today announced that James Trevelyan, Speedcast's Senior Vice President of Enterprise & Emerging Markets, United Kingdom, has been appointed to serve on the association's Board of Directors. James Trevelyan joined Speedcast in 2018 as a senior sales executive. Prior to joining Speedcast, he served for 17 years in various commercial and sales leadership positions at Arqiva, including a key role on the management board of the company's Satellite and Media division. James has also held sales roles at Nortel Networks, Lexmark and IBM. He recently completed a second term as Chairman of the Board of the World Teleport Association, a non-profit organization serving the interests of teleport operators and their satellite and technology partners. James is a graduate of the University of Strathclyde, Glasgow with a double honors degree in International Business and Modern Languages.

Astroscale's Founder & CEO, Nobu Okada, Elected as a Vice President of the IAF

October 15, 2020 - Astroscale Holdings Inc. announced its Founder & CEO, Nobu Okada, has been elected as a Vice President of the International Astronautical Federation (IAF) from October 2020 for a three-year period. Over 400 IAF member organizations from 71 countries, including all leading space agencies, companies and institutions were represented at the IAF General Assembly Plenary Meeting held on October 15, where Okada was elected alongside other Vice Presidents from a number of spacefaring countries including the United States, Germany and China. In his newly appointed position, Okada intends to contribute to the IAF as a representative of Japan and the Asian region, an advocate for orbital sustainability and a voice for the emerging new space sector.

Myriota Hires Dr Steve Winnall as First VP of Engineering

October 13, 2020 - Dr Steve Winnall has been appointed to the newly created role of Vice President of Engineering at Myriota, the leader in low-cost and long battery life satellite connectivity for the Internet of Things (IoT). With over 20 years' experience developing cutting edge technology for organisations including Baraja, Cochlear and the Australian Department of Defence, Dr Winnall will drive product development, oversee testing and data delivery operations at Myriota. Dr Winnall will report to Myriota's CEO and co-founder, Dr Alex Grant, and will work closely with Myriota's developer partners to serve a growing global customer base across industries including agriculture, defence, mining, utilities and transport & logistics. Prior to his appointment at Myriota, Dr Winnall was the VP of Product Development at Baraja; a rapidly growing business that develops LiDAR for self-driving vehicles. In this position, Winnall was integral to the growth of the team from 12 to over 100 employees, and oversaw its innovative technology development.

HISPASAT Names Jordi Hereu as New President

October 9, 2020 - The Board of Directors of HISPASAT, the Spanish satellite communications operator, approved the appointment of Jordi Hereu as the company's new president. The appointment took place after an extraordinary Shareholders' Meeting in which the Sociedad Estatal de Participaciones Industriales (SEPI), which holds 7.41% of HISPASAT's shares, proposed Hereu to preside over the company relieving Rosario Martínez Manzanedo. A graduate in Business Management and Administration, Hereu also holds an MBA from ESADE. He started his career in 1991 in Port 2000 and CILSA, linked to protecting the Logistics Activity Zone (ZAL) of the Port of Barcelona. Since 1999 he has held several positions in the Barcelona City Government, serving his functions as the council member for the Les Corts district until 2004, and as a councillor for Security and Mobility of the Barcelona City Government until 2006. After two years in this last position, Jordi Hereu was appointed the fifth deputy mayor of the Barcelona City Government and was the mayor of Barcelona from 2006 to 2011.

ManSat Appoints Katherine Gizinski as Group CEO

October 5, 2020 - ManSat has appointed Katherine Gizinski as its group Chief Executive Officer. Previously the group's Chief Commercial Officer, Katherine will continue to work closely with Chris Stott, ManSat founder, in his new role as Executive Chairman as she leads the company.

REPORTS

NSR: 5G to Become Catalyst for Satcom Growth, Generating \$32.5 Billion through 2029

October 27, 2020 - NSR's *5G via Satellite: Impacts, Demand and Revenue Potential to 2029* report, released

today, forecasts deep 5G impact in the satellite ecosystem with close to 10 Million active units by 2029. Beyond the obvious use cases, like Cellular Backhaul and Trunking, a wide spectrum of applications will experience accelerated demand from 5G, including IoT, Private 5G for Corporate Networks, Mobility or even more conservative users like Gov/Mil. This standardized service orchestration will disrupt how the different steps of the value chain relate to each other, including mainstream Communications Service Providers. With satellite networks now being managed from a 5G core, satellite becomes seamlessly integrable with the mainstream Telco ecosystem, eliminating barriers for satellite adoption and unlocking uncountable opportunities.

The European GNSS Agency (GSA) Releases the 3rd GNSS User Technology Report

October 23, 2020 - The European GNSS Agency (GSA) has just released its latest *GNSS User Technology Report*, providing a comprehensive analysis of latest GNSS trends and developments. With four Global Navigation Satellite Systems (GNSS) available and more than 100 satellites in operation broadcasting multiple frequencies, the GNSS industry is shifting towards the wide adoption of multi-frequency receivers across market segments to meet the diverging user needs of emerging applications. The Report counts on contributions from leading GNSS receiver, chipset manufacturers and service providers, and serves as a valuable tool to support planning and decision-making with regards to developing, purchasing and using GNSS technology. Published biennially since 2016, the User Technology Report has become a point of reference for the GNSS industry, research and policy-makers.

Euroconsult: Global Market for Commercial Earth Observation Data and Services to Reach \$8 Billion by 2029

October 22, 2020 - In its research report, "*Earth Observation Data & Services Market*," Euroconsult provides in-depth analysis of Earth Observation (EO) satellite systems, commercial EO data, and the value-added services that contribute to the sector. With a global market projected to reach \$8 billion by 2029, growth is expected to be driven by a mix of defense and new commercial markets, supported by the arrival of new constellation operators with low-cost solutions. In 2019, the total value of the industry was \$4.6 billion with the data market reaching \$1.6 billion and value-added services (VAS) contributing \$3 billion. Defense accounted for 64% of the data market, while environmental monitoring was the largest user of VAS.

NSR: Satellite-Based Earth Observation (EO), 12th Edition

October 22, 2020 - Covering the entire EO value chain, NSR's *Satellite-Based Earth Observation (EO)*, 12th Edition report offers the most comprehensive analysis of the fast growth EO markets. NSR's *Satellite-Based Earth Observation (EO)*, 12th Edition, offers superior value by giving readers a completely updated evaluation of the market for satellite-based data and report clearly lays out the evolution of the market.

Euroconsult: Satellite Imagery and Broadband to Nearly Quadruple the Earth Observation Precision AG Market by 2029

October 20, 2020 - For its latest research titled, "*EO4AG - Earth Observation for Agriculture*," Euroconsult has teamed up with TerraMetric, a US-based, global business development firm focused on geospatial and new space markets, to provide an in-depth analysis on the global trends, vertical integration opportunities and regional demand forecasted for Earth observation-based services and products addressing the agriculture sector. The two companies forecast that by 2029, the total agricultural market is expected to double in value to reach over \$815 million. While government-driven sales are foreseen to remain significant, the uptake of precision agriculture solutions within the private sector due to expected near-global broadband coverage is expected to be the main catalyst behind this anticipated market growth.

NSR: Satellite M2M/IoT Continues on Growth Trajectory despite COVID-19

October 14, 2020 - NSR's *M2M and IoT via Satellite, 11th Edition (M2M11)* report, published today, forecasts \$12.4 billion in revenues to be generated over the next 10 years. Although some M2M and IoT applications will be negatively impacted by COVID-19 in the short term, long term prospects look solid; given the overall value proposition and mission-critical features M2M/IoT services provide. The future growth story, and game change, rests with Smallsats, taking the industry from steady single-digit growth to highly robust CAGRs. Lower price points will unleash unaddressed use cases. Higher volumes will likewise lead to higher ARPUs, changing the overall demand dynamics of numerous verticals.

UPCOMING EVENTS

APSCC 2020 Conference Series, Virtual Edition, <https://apscsat.com>
LIVE Every Wednesday 9AM HK I Singapore Time

CABSAT 2020, November 9-10, Virtual Edition, www.cabsat.com
CABSAT now in its 26th edition presents SATEXPO, the only platform in the MEASA region bringing senior buyers in sat-comms, tech and business solutions together for 3 days under one roof. SATEXPO represents the entire ecosystem of satellite carriers, manufacturers, service providers and integrators serving government and military.

Asia Video Summit 2020, November 9-11, Singapore, Hybrid Edition, <https://asiavideosummit.com/>

World Satellite Business Week, November 9-12, Paris, France, Virtual Edition, <http://www.satellite-business.com/en>

PTC'21, January 17-20, Honolulu, USA, Virtual Edition, <https://www.ptc.org/ptc21/>

Editorials and Inquiries

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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.apsc.or.kr.