

APSCC Monthly e-Newsletter

December 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 November 1 to November 30.

INSIDE APSCC

APSCC 2020 Conference Series Season 3: 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

Speedcast Prepares for Final Restructuring Steps

November 30, 2020 - Speedcast International Limited announced that, after conducting its plan sponsor selection process, Centerbridge Partners, L.P. has been designated as the Company's Plan Sponsor under its previously announced proposal. The Company has filed a Notice of Designation of Plan Sponsor documenting the outcome of the selection process. Speedcast continues to progress towards a successful emergence from chapter 11 protection in the first quarter of 2021. The Company received conditional approval of its Disclosure Statement on 2 November 2020 and has been actively soliciting votes from eligible creditors in advance of the 8 December 2020 voting deadline. The solicitation process will continue to move forward as planned with the confirmation hearing scheduled for 17 December 2020.

SES Government Solutions Equips U.S. Airforce with SATCOM Capabilities

November 30, 2020 - SES Government Solutions (SES GS) has been awarded an Advanced Battle Management System (ABMS) tests contract that allows to compete for individual task orders that together have a ceiling value of USD 950,000,000. The agreement is aimed at achieving the maturation, demonstration and proliferation of capability across platforms and domains, leveraging open systems design, modern software and algorithm development in order to enable Joint All Domain Command and Control (JADC2). This contract is part of a multiple award multi-level security effort to provide development and operation of systems as a unified force across all domains (air, land, sea, space, cyber, and electromagnetic spectrum) in an open architecture family of systems that enables capabilities via multiple integrated platforms. The extensive SES multi-orbit fleet of Medium Earth Orbit (MEO) constellation and Geostationary Orbit (GEO) satellites will be leveraged to develop, test and deliver data and connectivity services. The agile nature of ABMS will enable the U.S. Air Force to rapidly acquire SATCOM capabilities through Indefinite Delivery/Indefinite Quantity (IDIQ) contracts over the next five years.

Kymeta Announces Commercial Availability of its Next-Generation Antenna, Terminal, and Services Making Mobile Global

November 30, 2020 - Kymeta has announced that the Kymeta u8 and Kymeta Connect are available for government and commercial purchase after November 30, 2020, unlocking the potential of broadband satellite connectivity and cellular networks to satisfy the overwhelming demand for communications on the move. Kymeta's next-generation solutions are built for mobility and designed to meet the needs of global defense agencies, government, first responders, and commercial customers. Kymeta's products and

services have been field deployed for three years and the demand for the Kymeta u8 presales has already exceeded expectations. With the introduction of the Kymeta u8, the company has meaningfully increased antenna throughput and significantly reduced the total cost of ownership. Kymeta's new products and services offer a breakthrough in performance, ease of use, and affordability, and it anticipates that these solutions will further enhance its position in both commercial and government markets, further increasing its lead over competitive offerings.

ViaLite Provides SES with Cross-Border Solution

November 27, 2020 - Radio frequency over fiber optic links are a great solution for moving high frequency analog signals over a long distance, but solutions need expert planning, design and installation to get the best performance. When SES needed a long distance link from the European Space Agency Redu station in Belgium to the SES site in Luxembourg, ViaLite's experience in the market and long distance link solutions made the company a winning choice for the project. SES, a World Teleport Association (WTA) leading satellite operator, required a long distance link system which provided a high dynamic range in bandwidth and could be controlled remotely by SES operations staff. The distance between the SES site and the Redu station is over 120 km and crosses over the border between Belgium and Luxembourg. ViaLite's DWDM long distance link system was the chosen solution; installed at the two sites, with a third site at the border required for signal amplification and interconnect between the two countries. The technology used is capable of connecting sites that can be hundreds of kilometers apart and has full bandwidth capability from 700 MHz through to 2450 MHz. As part of the system, optical amplifiers, optical switches, multiplexers and de-multiplexers were supplied, as well as dispersion compensation module and delay lines; provided to help with optimizing and balancing.

Integrasys Awarded ESA Project for Interference Cancellation and Removal Technology

November 25, 2020 - Integrasys has been awarded a 1.5M€ ESA project for interference cancellation and removal technology. CDTI, the Spanish Delegation for ESA, has funded a project for developing the first Spanish and European Interference Cancellation Technology for satellite signals without requiring a second antenna or knowing about the interference parameters. This new technology can play a critical role in Government networks, not necessarily only military; CLEANRF Integrasys solution cost is much more affordable than any other solution in the market today, with higher performance and lower physical footprint. The activity is funded with Element 2 of ESA's General Support Technology Programme (GSTP). Through the optional Programme ESA, Participating States and Industry work together to convert promising engineering concepts into a broad spectrum of useable products. By supporting market-oriented activities, driven by industry, Element 2 encourages more ideas and partnerships and ultimately leads to the most innovative technologies for European space industry. CDTI-E.P.E. is a Public Business Entity, dependent on the Ministry of Science and Innovation, which promotes innovation and technological development in Spanish companies. It is the entity that channels requests for help and support for R+D+i projects of Spanish companies at national and international levels. The objective of the CDTI is to contribute to the improvement of the technological level of Spanish companies. CDTI also holds the representation of Spain in the European Space Agency among other international organizations.

Spacecom and Paratus to Provide Broadband Connectivity in Africa via the AMOS-17 Satellite

November 25, 2020 - Spacecom has announced the signing of a contract with Paratus, a pan-African telecommunications service provider that offers a wide range of connectivity solutions to more than 22 African countries through an extensive independently owned network, via the fully digital AMOS-17 satellite. AMOS-17 is a fully digital HTS satellite, designed specifically to meet Africa's fast-growing communication demands. The satellite's C-Band HTS, Ka-Band and Ku-Band coverage, enable the combination of broad regional beams and high throughput spot beams that maximize throughput and spectral efficiency. AMOS-17 supports connectivity between Africa, the Middle East, Europe, India and China. Paratus South Africa is committed to be an end-to-end, single-point service provider to customers whose businesses extend to geographically remote areas and those who need a versatile communication solution that can be easily implemented. Through leveraging business technologies such as the AMOS-17 satellite, businesses can enjoy the instant integration of satellite into their value proposition which can be tailored to meet their needs.

SpaceBelt and Red Piranha Partners for Space Communications

November 25, 2020 - Red Piranha, Australia's leading developer and manufacturer of advanced cybersecurity technology, has signed a Memorandum of Understanding (MoU) to forge a partnership with Cloud Constellation's SpaceBelt. Working in collaboration to formulate an Information Security Strategy to

assist the adoption of SpaceBelt's technology within the government, defence, banking, healthcare, and other related industries. The MoU includes, but is not limited to co-operation concerning: Assisting SpaceBelt in its plans to establish its Australian operations and commercial interests; Continue the development of our partnership for future potential collaborations with our CESOC within SpaceBelt's discreet environment. The partnership with SpaceBelt will see our flagship Crystal Eye XDR platform and our Security Operations Centre be the first line of defence, in the protection of highly sensitive information, using the world's first cloud and data service based entirely in outer space.

Telesat to Become Public Company through Agreement with Loral Space & Communications and PSP Investments

November 24, 2020 - Telesat Canada has entered into an agreement with Loral Space & Communications Inc. and Public Sector Pension Investment Board (PSP Investments) pursuant to which Telesat Canada and Loral will become subsidiaries of Telesat Corporation (Telesat), a new publicly traded Canadian incorporated and controlled company. The shares of Telesat will be listed on the Nasdaq Global Select Market at the closing of the transaction, the market on which Loral is currently listed, and Telesat is also considering a listing on a Canadian stock exchange in connection with the closing of the transaction in 2021. Telesat Corporation will be headquartered in Ottawa and led by Telesat Canada's Chief Executive Officer Daniel S. Goldberg. Telesat's voting and governance provisions will ensure that the company is and remains Canadian-controlled. This transaction allows public market investors, including Loral's stockholders, to own Telesat directly, and, moreover, provides Telesat access to the public equity markets to support its compelling growth initiatives, including its revolutionary, highly advanced low Earth orbit (LEO) satellite constellation. Telesat's state-of-the-art LEO network will enable affordable, reliable, high-speed broadband connectivity everywhere on Earth, positioning Telesat to be a leader in this high growth industry. The transaction is expected to close in the second or third quarter of 2021, subject to the receipt of required regulatory approvals, the approval of Loral's stockholders (including a majority of Loral's stockholders not affiliated with MHR Fund Management, PSP Investments or other transaction participants) and other customary conditions.

US Government Awards Gilat Additional Contract for Military Communications Program

November 24, 2020 - Gilat Satellite Networks subsidiary Wavestream has received a multi-million-dollar order from the United States Government for a military communication program contract. With this award, Wavestream achieves an industry record shipment milestone by surpassing 5,000 units of its high-power 50W Ka-band military Block Upconverter (BUC) to be delivered to this military program. "Wavestream is honored to be the vendor of choice for the US government military communication program and to be reliably supplying its high-power 50W Ka-band BUC for over 14 years. This product is the most widely deployed solid state amplifier built at this power level," said Bob Huffman, Wavestream's General Manager. "With this order we have surpassed shipment of 5,000 units, a testament to Wavestream's unmatched production capacity and product longevity of military-grade high-power Ka-Band SSPA/BUCs."

Eutelsat's Konnect Ramps up Retail Distribution of New Capacity Brought by EUTELSAT KONNECT Satellite

November 23, 2020 - Leveraging the availability of the EUTELSAT KONNECT satellite, Eutelsat Communications' new direct arm, konnect, has kick-started the retail distribution of next-generation satellite Broadband across Europe and Africa. The service is currently being rolled out across both continents, with broadband packages designed to address the needs of individuals, small businesses and institutions currently operating beyond the fiber footprint. The recent acquisition of BigBlu, Europe's leading distributor of satellite broadband, has added significant firepower to konnect's retail capabilities. With regulatory approvals to operate across both continents secured, konnect has launched a multi-channel retail strategy encompassing online distribution and telesales in Europe and a multiple channel partners and retail stores in Africa. In complement to the recent wholesale agreements with Orange for the entire capacity in France and TIM for capacity covering Italy, initial retail distribution will be focused on the UK, Ireland, Germany, Spain and Portugal in Europe and Côte d'Ivoire and Democratic Republic of Congo in Africa, ramping up progressively to cover the 15 European and 39 African markets in EUTELSAT KONNECT's footprint.

World-first as New Real-time Link between Satellites Promises Quicker Delivery of Data and Imagery across the Globe

November 23, 2020 - The world's first ever publicly-available, real-time link between satellites in high and low earth orbits is now available, it was announced today. After a five-year collaboration, Inmarsat and

Addvalue Innovation are pleased to announce the Commercial Service Introduction (CSI) of their Inter-satellite Data Relay System (IDRS) service, following the successful demonstration of the first live data connectivity between customer Capella Space's Control Center and its recently launched Sequoia satellite at low earth orbit. This success paves the way for satellites in low earth orbits to continuously maintain communications with the ground, receiving and transmitting data on demand and in real-time. Satellites in lower orbits typically include those used for climate observations and disaster relief efforts, as well as a host of other applications. Traditionally, these satellites have had to wait until they came back into range of a ground station before being able to receive tasking information and transmit telemetry and valuable collected data. The new data link should reduce waiting times for such data transfers from several hours to a handful of minutes. This can enhance life-saving efforts in a natural disaster or enable observers to spot issues and direct resources to tackle them before they develop or get out of hand.

Relativity Space Closes Series D Financing as It Solidifies Sector-leading Momentum

November 23, 2020 - Relativity Space, the first company to 3D print an entire rocket and build the largest metal 3D printers in the world, today announced it closed a \$500 million Series D equity funding round. The round was led by Tiger Global Management with participation from new investors Fidelity Management & Research Company LLC, Baillie Gifford, ICONIQ Capital, General Catalyst, XN, Senator Investment Group, and Elad Gil. Existing investors participating in the round include BOND, Tribe Capital, K5 Global, 3L, Playground Global, Mark Cuban, Spencer Rascoff, and Allen & Company LLC, among others. The Series D equity funding validates Relativity's sector-leading momentum across commercial execution, technical milestones, and talent growth. The funding will enable Relativity to accelerate its planned initiatives, including its factory of the future, launch vehicle development, and 3D printing technologies as it builds toward humanity's multiplanetary future. Disrupting 60 years of aerospace, Relativity's radically simplified supply chain enables the company to build its orbital rocket, Terran 1, with 100x fewer parts in less than 60 days. By fusing 3D printing, artificial intelligence, proprietary software, and autonomous robotics, Relativity's team is creating an entirely new value chain for aerospace, starting with orbital launch.

OneWeb Successfully Emerges from Chapter 11, Announces New CEO and Recommences Satellite Launches

November 20, 2020 - OneWeb, announces its emergence from U.S. Chapter 11 bankruptcy protection and achievement of all relevant regulatory approvals. A consortium of UK Government (through the UK Secretary of State for Business, Energy and Industrial Strategy) and Bharti Global, has invested \$1bn of new equity to offer broadband connectivity services, via a constellation of 650 LEO satellites. OneWeb will continue to be headquartered in the UK, bringing new R&D programmes, manufacturing opportunities and a global platform with priority spectrum usage rights. The company will ensure that the UK is at the forefront of a new commercial space industrial age, evolving technology and innovation, and will work with the UK commercial and academic space communities, along with other international specialists, in its research and development activities. In connection with completion of the restructuring process, OneWeb is pleased to announce that Neil Masterson has been appointed CEO. Neil is formerly Co-Chief Operating Officer at Thomson Reuters having enjoyed a 20-year career with the global provider of news, information, and software. He succeeds Adrian Steckel, who continues as an Adviser to the Board. Adrian joined OneWeb as CEO in September 2018 and has guided OneWeb through three successful launches, delivering 74 satellites into orbit, and securing priority spectrum use rights for OneWeb.

Av-Comm Joins Local Fijian Businesses to Deliver University of South Pacific's Satcom Upgrade

November 20, 2020 - Av-Comm is proud to have worked in partnership with in-country engineering and telecommunications specialists to begin the upgrade of The University of the South Pacific's (USP) existing ICT network. Av-Comm were initially engaged by USP to future-proof their existing hub in Suva, Fiji by upgrading it with a 7.6m C band satellite dish. The project's objective was to connect USP's network of 14 campuses throughout the South Pacific region to ensure the University's significant research projects and teaching initiatives could benefit from the collaboration and convergence of a number of different academic specialities, across countries and cultures. The security of the network was central to the success of the project, with the implementation of private research and video conferencing links to ensure that projects spanning such distances and countries could be sustained safely. Amidst the evolving COVID-19 Pandemic situation, with travel restrictions in place between Australia and many of the Pacific Islands, Av-Comm was able to take advantage of its wide network of engineering partners throughout the Pacific region to complete the civil works and the foundations for the satellite ground station.

IEC Telecom Links with Thuraya to Offer Affordable Digitalisation for All Vessel Types

November 20, 2020 - IEC Telecom has joined forces with Thuraya, the leading global satellite operator, to bring affordable quality satcom technology to smaller vessels that have limited onboard space with the cutting-edge Orion Edge V, which enables a VSATlike communications experience over L-band with access to a cloud-based system offering a wide range of telecom services. Incorporating IEC Telecom's groundbreaking OneGate system into the pre-existing Orion Edge solution has brought communications to a new level with all telecom services now available via a virtual platform. ICT managers can monitor and control the network across all vessels of their fleet remotely via a user-friendly set of dashboards. New services, including telemedicine, videoconferencing, and remote maintenance, can be added on demand via IEC Telecom's application store.

Comtech Awarded Five-year Multi-million Dollar Upgrade with Saudi Telecom Company

November 19, 2020 - Comtech Telecommunications Corp., a world leader in secure and highly reliable location, public safety, navigation, and communication technologies, announced today that its Location Technologies group, a division of Comtech's Commercial Solutions segment, has finalized a multi-million dollar upgrade contract during the first quarter of fiscal 2021 for various location-based services (LBS) with a tier-one mobile network operator in Saudi Arabia. This five-year agreement provides both active and passive location services supporting 2G, 3G and 4G networks. "Location technologies are vital components in public safety efforts worldwide," said Fred Kornberg, Chairman of the Board and Chief Executive Officer of Comtech Telecommunications Corp. "We are proud to advance the safety of our customer's citizens on a global scope and this agreement demonstrates our strong commitment to public safety through our advanced location technologies."

Eutelsat to Dispose of its Interest in Euro Broadband Infrastructure

November 19, 2020 - Eutelsat Communications has agreed the disposal of its 51% stake in Euro Broadband Infrastructure (EBI), the company operating the KA SAT satellite, and related European broadband business to Viasat Inc, its 49% shareholder, for an initial consideration of €140m. The transaction completes the reorganization and simplification of Eutelsat's broadband distribution in Europe following the acquisition of Bigblu Broadband Europe, while moving towards an open technology and freeing up financial resources for investment in direct distribution. Under the agreement, Eutelsat and its subsidiaries will continue to provide transitional services to EBI, including the operation of the ground network for KA SAT, while EBI will provide service continuity to the KA SAT subscriber base of Bigblu Broadband Europe acquired by Eutelsat in September 2020. The stake will be sold for an initial consideration of €140m, subject to a customary net working capital and net debt adjustments at the time of completion. Two years following completion, the consideration may be adjusted up or down by up to €20m depending on the level of certain EBI revenues achieved over this period. The transaction will also result in the deconsolidation by Eutelsat of the cash held by EBI of €90m at 30 September 2020. Completion is expected in the first quarter of calendar year 2021, subject to customary conditions precedent. The net impact of the combined operations of the acquisition of Bigblu Broadband Europe and the disposal of EBI is estimated at around -€20m on Operating Vertical Revenues and -€30m on Discretionary Free-Cash-Flow for the first full fiscal year following completion of the transactions.

Viasat to Accelerate European Broadband Strategy ahead of ViaSat-3 Satellite Launch

November 18, 2020 - Viasat today announced it will strengthen its European presence by purchasing the remaining 51% share of Euro Broadband Infrastructure (EBI), the wholesale broadband services business created as part of Viasat's former partnering arrangement with Eutelsat Communications. EBI provides fixed and mobile broadband services on a wholesale basis in the European and Mediterranean markets. In the initial partnering arrangement, Eutelsat contributed its existing European broadband operations to the wholesale business, including ownership of the KA-SAT satellite and related ground infrastructure. Eutelsat initially owned 51% of EBI, and Viasat the remaining 49% interest. The 51% controlling interest in EBI was acquired for €140M subject to customary net working capital and net debt adjustments. The purchase price will be funded with available cash, resulting in a cash outlay of €50M, net of approximately €90M of EBI's cash on hand. The wholesale business adds to Viasat's established retail broadband services business in Europe where Viasat is offering enhanced home internet service in select European countries, including Spain, Norway and Poland. The second ViaSat-3 class satellite in that constellation will cover Europe, Middle East and Africa (EMEA), and is targeted for launch in 2022. Under the agreement, Eutelsat and its subsidiaries will continue to provide transitional services for a limited period of time to Viasat's EBI business, including the operation of the ground network for KA-SAT, while Viasat/EBI will provide service continuity to the KA-SAT subscriber base of Eutelsat's Bigblu Broadband Europe division.

AsiaSat Awarded ISO/IEC 27001:2013 Certification for Information Security

November 18, 2020 - Asia Satellite Telecommunications Company Limited (AsiaSat), Asia's premier satellite solutions provider, has been awarded the ISO/IEC 27001:2013 certification, a globally recognised international standard for Information Security Management System (ISMS) for its hosting service provided from AsiaSat's teleport in Hong Kong. The certification validates the company's commitment to continually enhancing its service security and integrity to customers. AsiaSat received the certification following a security compliance audit validated by an independent audit firm, covering areas of operational and security control; information security policies and procedures; risk assessment and management; monitoring, measurement and evaluation. ISO/IEC 27001:2013 is an international compliance framework set by the International Organisation for Standardisation (ISO), the world's largest developer of voluntary international standards, and the International Electrotechnical Commission (IEC).

Intelsat Cellular Backhaul Managed Service Coming to Europe Helping MNOs Expand Coverage

November 18, 2020 - Intelsat has recently seen a doubling of traffic in rural cellular networks, which we attribute to the shift in increased remote working, education and healthcare to these areas, and away from centralized urban centers. This trend is adding to the already-existing increased demand for broadband connectivity outside of traditional cellular coverage areas. Intelsat understands that Mobile Network Operators (MNOs) need a way to quickly respond to demand shifts like this with reliable, simple-to-deploy and cost-effective solutions. To help MNOs of any size meet this need, Intelsat has introduced a fully managed service called Intelsat CellBackhaul that empowers them to quickly and efficiently expand their coverage to any location in their market – no matter how rural or remote, without the logistical and financial complications usually associated with building out traditional terrestrial infrastructure. Intelsat recently implemented a new gateway designed exclusively to enable Intelsat CellBackhaul service in Europe, leveraging Comtech hubs at the Intelsat datacenter in Fuchsstadt, Germany. With Intelsat CellBackhaul, European MNOs will soon be able to quickly and cost-effectively expand their network coverage areas – helping to connect more users, particularly those in rural, remote and hard-to-reach places.

TIM Commits to Capacity on EUTELSAT KONNECT and KONNECT VHTS to Expand High-Speed Broadband Delivery

November 18, 2020 - Eutelsat Communications has signed a Letter of Agreement with TIM for wholesale capacity on the EUTELSAT KONNECT and KONNECT VHTS satellites which will enable Italian households, even those living in the most isolated areas, to benefit from very high-speed fixed broadband via satellite from January 2021. Under the agreement, TIM will purchase the entire Italian capacity on EUTELSAT KONNECT which started operations this month, as well as the vast majority of the capacity covering Italy on the follow-on satellite, KONNECT VHTS, once it enters service. TIM will have exclusive rights for the distribution of satellite broadband in Italy on these satellites during the entire lifetime of the contract. This multi-year agreement is expected to represent a total contract value of almost 150 million euros for Eutelsat. It follows a similar contract with Orange in France for capacity on both satellites, further highlighting the relevance of satellite as a cost-effective, off-the-shelf and reliable infrastructure to extend the coverage of telecom operators beyond the reach of terrestrial networks and ensure ubiquitous coverage of a territory. In service since November 2020, EUTELSAT KONNECT has a total capacity of 75 Gbps and is able to assure full or partial coverage of up to 15 countries in Europe and 39 in Africa, offering speeds of up to 100 Mbps to both companies and individuals in the digital divide at competitive monthly rates. The KONNECT VHTS satellite will embark the most powerful on-board digital processor ever put into orbit and provide 500 Gbps of Ka-Band capacity over Europe, yet further enhancing the service.

Intellian's v60Ka 2 and v100NX Ka Antennas Gain Type Approval from Telenor Satellite

November 18, 2020 - Intellian announced that two of its industry-leading antenna systems, the v60Ka 2 and v100NX Ka, have gained type approval from Telenor Satellite for use on their THOR 7 Ka-band GEO satellite network. This means that the systems are now officially certified to take their place in service alongside Intellian's v85NX, the first 85cm antenna to receive type approval on the network. The Intellian v100NX Ka delivers market-leading RF performance and is future-proofed with a specially-tuned radome and reflector in anticipation of forthcoming 2.5GHz wideband Ka network services. Like all NX Series antennas, the v100NX Ka supports multi-orbit operation and can be simply converted between Ka and Ku bands, allowing owners of existing v100NX Ku-band antennas to easily switch to the THOR 7 network if desired. An optional 10W BUC upgrade provides a straightforward means of further boosting the antenna's performance.

Comtech Receives Contract Renewal Worth \$4.2 Million with Tier-One Carrier

November 18, 2020 - Comtech Telecommunications Corp., a world leader in secure and highly reliable location, public safety, navigation, and communication technologies, announced today, that during its first quarter of fiscal 2021, its Location Technologies group, a division of Comtech's Commercial Solutions segment, has finalized a contract renewal for location and mapping technologies worth \$4.2 million with a tier-one mobile network operator. "This long-standing service agreement represents the superior development, engineering and support operations for location and mapping Comtech is known for," said Fred Kornberg, Chairman of the Board and Chief Executive Officer of Comtech Telecommunications Corp. "This customer has come to rely on Comtech's unsurpassed service, which has become all the more imperative during the COVID-19 pandemic."

ORBCOMM Launches First Commercial LoRa WAN™ On-Board Vessel IoT Solution

November 18, 2020 - ORBCOMM Inc., a global provider of Internet of Things (IoT) solutions announced that it has expanded its industry-leading portfolio of on-board vessel IoT systems to include LoRa WAN™ (LoRa) technology. Through a partnership with Net Feasa, a global IoT service provider based in Dingle, Ireland and Sunnyvale, CA, ORBCOMM has deployed the first commercially available solution using LoRa technology to monitor containers on board vessels for a large global shipping line. The solution combines VesselConnect, ORBCOMM's industry-leading refrigerated container management application with Net Feasa's EvenKeel™ IoT device connectivity, management and services platform. Refrigerated containers communicate in real time through LoRa gateways mounted in strategic locations on the vessel. Key container data, including temperature, humidity and alarms, is collected in EvenKeel and updated in ORBCOMM's VesselConnect.

FCC Streamlines Licensing Rules for Many Satellite Operators

November 18, 2020 - The Federal Communications Commission adopted changes to streamline its satellite licensing process and increase operational flexibility for satellite operators. With the creation of a new satellite licensing framework and the elimination of unnecessary paperwork, the FCC continues to make the regulatory approval process for satellite licenses more efficient and less burdensome. With today's Report and Order, the FCC establishes a new, optional unified licensing framework. Under its current rules, the FCC issues separate licenses for earth stations and space stations in a satellite system based on the different application requirements that govern satellite services. But with the adoption of the optional unified licensing framework, available to systems operating above 10 GHz, space stations and blanket-licensed earth stations in a satellite system will be able to be authorized under a single license. This licensing framework will eliminate redundancies in the separate licensing processes for space stations and earth stations and accelerate the deployment of new earth stations and, in turn, services to the public. As an additional streamlining measure, earth station applicants may certify that they will comply with the relevant terms and conditions of the license for the space station with which the earth station will communicate, in lieu of providing redundant technical demonstrations or other information. This measure will afford the benefits of streamlining to independent earth station operators. The Report and Order also aligns the build-out periods for qualifying earth stations with the accompanying build-out periods for their communicating satellites. This alignment offers satellite operators greater certainty about the location of their gateway earth stations earlier in the satellite design process. In addition, the Report and Order eliminates unnecessary reporting requirements for satellite operators and requirements to notify the FCC of certain minor changes to earth stations.

Viasat Phased Array Antenna Enters Final Testing Phase for SES's O3b mPOWER System

November 17, 2020 - Viasat today announced that its solid-state, fully-electronic phased array flat panel antenna, selected by SES for the O3b mPOWER satellite communications (satcom) system, has entered the Test Readiness Review (TRR) stage of the program. TRR is the final stage of testing to verify compliance with the antenna's performance requirements. Viasat expects the first phased array prototype for the O3b mPOWER network to be delivered to SES early next year. Viasat's modular phased array antenna design is scalable, customizable and will be offered in multiple sizes, enabling it to be utilized for both fixed and mobile broadband applications. For SES's O3b mPOWER Medium Earth Orbit (MEO) system, the phased array antenna will operate over the full ITU Ka-band spectrum. A different version of the antenna can be made to operate on Ku-band. Viasat's phased array has the ability to dynamically steer beams for rapid, accurate satellite position tracking and seamless handover between satellites in the O3b mPOWER network; and can perform on-the-fly reconfiguration of antenna characteristics to enable end-terminals to communicate in a hybrid MEO-to-GEO (Geostationary) environment.

ST Engineering Reorganises for Global Growth and Success

November 17, 2020 - ST Engineering announced organisational changes that will position the Group for its next phase of growth, and propel it towards its aspiration to become a global technology, defence and engineering powerhouse. Effective 1 January 2021, ST Engineering will be reorganised as Commercial and Defence & Public Security clusters, replacing the sector-structure of Aerospace, Electronics, Land Systems and Marine. The new organisation structure is designed to enable better execution of the Group's global growth strategy of strengthening its core businesses, and pursuing growth in smart city and international defence businesses. It is also designed for customer-centricity, enabling the business clusters to build deeper and more strategic customer partnerships. This change provides greater effectiveness in resource allocation, and also helps accelerate the development of deeper domain expertise to further enhance the performance of its businesses.

Viasat and Infostellar Sign Global Real-Time Earth Agreement

November 16, 2020 - Viasat Inc. and Infostellar Inc., announced it signed a Real-Time Earth (RTE) agreement. Through the collaboration, Viasat will act as a market channel lead for Infostellar services in the U.S., Infostellar will act as a Japanese market channel lead for Viasat's growing RTE network and Viasat will become a preferred supplier of antennas for Infostellar's expanding network of ground stations. Viasat's RTE network provides GSaaS globally to the commercial and government earth observation and remote sensing communities. The RTE service offers affordability and reduced latency through automation and geographic diversity on a pay-per-use basis. Viasat's RTE service supports next-generation and legacy low earth orbit (LEO) satellites using the S-, X- and Ka-bands, which enables satellite operators to meet current and future data requirements. Infostellar's flagship service, StellarStation, is a cloud-based software platform that enables the virtualization of ground stations around the world to provide GSaaS to leading companies in the emerging space economy. With backing from key industry players such as, Airbus Ventures, Daiwa Energy & Infrastructure, Mitsubishi UFJ Lease & Finance, and Sony, Infostellar is poised for substantial growth in the global space arena.

Speedcast Sells Maritime Customer Contracts to Inmarsat

November 16, 2020 - Speedcast International Limited and Inmarsat have reached agreement on the sale of Speedcast's primary Fleet Xpress, FleetBroadband and Fleet One service contracts to Inmarsat. The agreement marks another significant step for Speedcast as it looks to emerge from its Chapter 11 proceedings announced earlier this year, and is subject to approval by the U.S. courts overseeing the Company's financial restructuring. Through the agreement, the Speedcast customers that are transferred to Inmarsat will be assured of continuing access to Inmarsat's market-leading connectivity services. The agreement covers both Speedcast's L-band maritime contracts in which Inmarsat serves as the primary connectivity onboard, as well as the full Inmarsat Fleet Xpress portfolio from Speedcast. Speedcast will continue to deliver managed services to its commercial maritime sector clients with primary VSAT and other non-Inmarsat mobile satellite services (MSS) onboard, and will maintain its Inmarsat Distribution Partner status to deliver existing MSS back-up services, with no impact to customer operations or support. Speedcast will also continue to deliver Inmarsat Land MSS services to its enterprise customers as part of the Company's land portfolio, with enterprise clients and sites unaffected by this agreement. Inmarsat will take on management of the transitioned Inmarsat Maritime contracts, as well as the 24/7 operations and support for customers through its network operations and customer support centers. Customers will continue to receive the highest quality of service, with the deal including a fully supported handover to ensure a seamless transition.

Inland Cellular Brings Critical 4G Broadband to Rural Areas Using Intelsat CellBackhaul

November 13, 2020 - Intelsat and Inland Cellular, a regional mobile network operator (MNO) serving communities in the U.S. Pacific Northwest, are partnering to bring reliable 4G LTE broadband coverage to people in rural areas of Washington state. Inland Cellular needed an efficient way to extend its high-performance service to customers no matter where they live, work or travel – particularly customers in rural areas and at remote construction, mining and camping sites. Intelsat CellBackhaul, an end-to-end managed service launched earlier this year, proved an ideal solution because it overcomes the technical, but mostly importantly, the economic challenges often associated with traditional, terrestrial backhaul deployments for rural coverage. Intelsat CellBackhaul delivers a fully managed end-to-end cellular backhaul service that provides connectivity over Intelsat's global network. The service includes on-site installation and maintenance of equipment, such as antennas and modems, and is available through a number of flexible service plans configured to meet differing MNO business needs. Intelsat CellBackhaul is uniquely positioned to enable MNOs of any size to quickly and economically backhaul high-quality, reliable

mobile broadband coverage in rural, low-population density regions, and hard-to-reach areas of the U.S.

Crew Welfare Innovation Challenge Won by Canary Sentinel and Workrest Fatigue Management Solution

November 13, 2020 - Inmarsat has unveiled a joint entry from Canary Sentinel and Workrest as the winner of the inaugural Crew Welfare Open Innovation Challenge, a competition rewarding technologies most likely to benefit crew safety, health and wellbeing. The Challenge, created with Shell Shipping & Maritime and digital consultancy Thetius, attracted 49 entries from startups and small and medium sized enterprises, with proposals spanning deck safety, fatigue, administrative burden and wellbeing. The winning entry - an intelligent fatigue management and rest coaching platform - secures £10,000 for proof of concept on a Shell Shipping & Maritime tanker. Designed to enhance the management of shift work using real time health tracking and personalised rest management, the Canary Sentinel-Workrest intelligent fatigue management platform makes recommendations that take account of individual vulnerabilities and abilities to adapt over a 24-hour cycle. Biomarkers including heart rate variability, sleep quality and stress levels are used to identify fatigue impairment, while individuals receive self-health management and rest coaching.

Talia Adds Ka-band Spot Beam Covering the Levant Region

November 12, 2020 - Talia today announced its further collaboration with Arabsat, acquiring an additional Ka-band spot beam with coverage across the Levant region. The new agreement adds an additional Ka-band spot beam on Arabsat 5C at 20°E to Talia's existing beams in Iraq and Afghanistan and shows the increasing demand for High-Throughput Satellite (HTS) services across the region. The latest coverage also takes advantage of Talia's interconnectivity at Jordan Media City, allowing further onward connectivity to Talia's global MPLS fibre network and onward to Frankfurt, London, Dubai and Washington. Further, the Levant spot Ka-band beam provides interconnectivity within the footprint bypassing the hub and allowing point-to-point or point-to-multipoint connections enabling lower transmission costs and smaller antennas.

Elbit Systems Launches E-LynX-Sat – a Portable Tactical SATCOM System

November 12, 2020 - Elbit Systems has launched E-LynX-Sat, a compact satellite communications (SATCOM) add-on system. The new system utilizes a lightweight less than 1 Kg terminal that interfaces with Elbit Systems' E-LynXTM Software Defined Radio (SDR) solution. E-LynX-Sat enables Infantry and maneuvering forces to maintain robust and secured, on-the-walk and on-the-move, voice and data communication services, over ranges of hundreds of kilometers. The operational benefits of the newly launched E-LynX-Sat system were successfully demonstrated during the British Army's recent Warfighting Experiment 2020. E-LynX-Sat integrates miniature phased-array antennas, unique satellite communication modem, beam steering and error correction software as well as data compression protocols. Using standard Ka and Ku-band Geostationary satellites, it features automatic electronic satellite tracking and direct sequence spread spectrum, enabling continuous over the horizon operations on-the-walk and on-the-move. E-LynX-Sat comprises of compact portable terminals and a Hub base station that is installed in satellite ground stations.

NXTCOMM Defense Division Formed to Support Military Communications Imperative

November 11, 2020 - NXT Communications Corporation announced the formation NXTCOMM Defense, a new division focused on serving the military mobile Communications On-the-Move (COTM) market. NXTCOMM is developing scalable, highly conformal Electronically Steered Antenna (ESA) technology to support the U.S. Defense imperative to leverage next-generation Geostationary Orbit (GEO) and Non-Geostationary Orbit (NGSO) satellites – Low Earth Orbit (LEO) and Medium Earth Orbit (MEO). NXTCOMM's low-profile electronically steerable flat panel antenna will provide warfighters the ability to track and switch amongst multiple satellites in LEO and other orbits – and deliver secure, resilient communications on the move. NXTCOMM's Defense Division will serve as a leading manufacturer of antennas and antenna systems for defense applications and will initially target special forces most in need of portability, low-profile stealth, broadband capacity and high-level operational performance. Huge shifts in military capacity requirements – fueled by the Space Force's new warfighting architecture – can only be unlocked by ESAs that operate over LEO.

Blue Canyon Technologies to Be Acquired by Raytheon Technologies

November 10, 2020 - Blue Canyon Technologies, Inc. (BCT) announced that it has entered into a definitive agreement to be acquired by Raytheon Technologies. BCT will report into Raytheon Intelligence & Space, a business of Raytheon Technologies, subject to certain regulatory and customary closing conditions. Blue

Canyon's diverse portfolio of spacecraft has successfully enabled a broad range of missions and technological advancements for the U.S. Government and new space economy, further reducing the barriers of space entry. The acquisition will allow BCT to grow its innovative product line of turnkey small satellite solutions, including nanosatellites, microsatellites, and ESPA-class satellites, and related technology and meet increasing customer demand. BCT is currently building more than 90 spacecraft for government, commercial and academic missions. BCT has seen significant growth over the past 12 months and recently opened its new 80,000-square-foot Satellite Constellation Factory headquarters and production facility in Lafayette, Colorado. BCT will continue to serve its customer base under the current business name and brand from their Boulder and Lafayette, Colorado facilities.

Saturn Establishes a JV with Ananth Technologies to Build and Launch Nationsat Satellites for the Indian Market

November 10, 2020 - Saturn Satellite Networks Inc. (Saturn), has signed an exclusive agreement with India's preeminent aerospace company, ANANTH Technologies Ltd., to form an Indian Joint Venture company (SaAn Satellite Networks India "SSNI"), subject to all regulatory approvals being received, to locally produce the Nationsat Satellite developed by Saturn in ANANTH's satellite integration facilities in India. The Nationsat is based on the Novawurks (a unit of Saturn) Hyper Integrated Satlet (HISat), a GEO qualified satellite platform that is modular and scalable to any payload mission in any orbit or power requirements. With the emergence of the newly established Space Policy of India, SSNI will be one of the leading satellite technology companies which will develop commercial GEO satellites for Indian customers. Since its inception in 1992, ANANTH Technologies Ltd., founded by Dr. Subba Rao Pavuluri has grown to be a leading aerospace and satellite company in India. ANANTH supports the growth of the Indian economy through leveraging aerospace technologies. Its offerings include the manufacture of critical aerospace systems and high-value geospatial services. ANANTH's systems have been integral in over 65 launch vehicles and 90 spacecrafts built in India in close collaboration with the IndianSpace Research Organization. Expertise, quality and focus have been the guiding principles at ANANTH, with its products and services internationally certified (AS 9100C & ISO 9001:2008) and recognized by their clients.

SSC Awarded ESA Contract to Define Next-gen Ground Segment Systems for CubeSats and SmallSats

November 10, 2020 - The UK subsidiary of SSC (Swedish Space Corporation) has been awarded a contract by the European Space Agency ESA to develop a next generation concept for space to ground communications targeting the "NewSpace" (CubeSats and SmallSats) market. The initiative is supported by the UK Space Agency and aims at developing a range of new technologies that will address some of the market entry barriers faced by CubeSat organizations globally. The Global Newspace Network Evolution (GNNetE) project brings together a number of new technologies that address costs and technical difficulties surrounding space to ground communications. It aims to support activities of CubeSat operators and manufacturers who are developing cost effective small to medium constellations and solutions for rapid deployment of space assets. The SSC UK team is working closely with a wide range of European CubeSat manufacturers and technology partners to develop solutions that can eliminate some of their most challenging technical problems, such as spectrum allocation and effective management of spacecraft constellations.

Orbcomm Launches Next-Generation, Dual-Mode ST 9100 Terminal for Diverse IoT Applications

November 10, 2020 - Orbcomm has launched the ST 9100, a next-generation, dual-mode telematics device targeted for monitoring and controlling assets in the most remote geographies around the world. The versatile device can be utilized for a wide variety of IoT applications such as vehicle security, fleet management, vessel monitoring, fisheries management as well as the remote monitoring of equipment in the oil & gas, construction and utilities sectors. Orbcomm's ST 9100 is future-proof, enabling multi-network connectivity over cellular networks using LTE capabilities with 3G and 2G fallback and reliable low-latency satellite communications as needed to provide cost-effective, ubiquitous coverage. An embedded Orbcomm global SIM enables cellular connectivity on over 565 cellular networks, facilitating deployment in nearly any region of the world regardless of the connectivity option. The new device features a larger backup battery, which allows for uninterrupted operation when an external power failure has occurred for a minimum of 48 hours for improved reliability and performance. Orbcomm enhanced its next-generation device with additional inputs and outputs and serial interfaces, greater memory as well as a dual CANbus that allows customers to monitor and control different electronic control units over various protocols. The ruggedized, environmentally sealed device is also built to withstand extreme temperatures, shock and vibration and is rated to IP67 for ingress protection

SES and Gilat Expand Partnership with Follow-on Order for High-Speed Modems

November 9, 2020 - SES and Gilat are expanding their partnership with a multi-million-dollar follow-on order for high-speed modems. Gilat's modems will deliver multi Gbps throughput, targeting high-end services over SES's O3b and O3b mPOWER MEO constellations. Gilat's high-throughput modems will support SES in delivering fiber-equivalent services for government and high-end enterprise solutions. "Gilat highly values the strong partnership with SES and is pleased to further expand the collaboration, bringing to market high-end modems supporting O3b mPOWER's market segments," said Amir Yafe, Head of Global Accounts at Gilat. "Gilat shares SES vision on the need for a combination of GEO and Non-GEO Stationary (NGSO) constellations to address the growing demand for affordable low-latency global broadband connectivity."

Telesat and the Government of Canada Finalize \$600M Agreement to Bridge Canada's Digital Divide with Telesat's Low Earth Orbit Satellite Constellation

November 9, 2020 - Telesat and the Government of Canada announced the completion of their agreement to ensure affordable, high-speed broadband connectivity across all of Canada with Telesat's advanced, state-of-the-art Low Earth Orbit (LEO) satellite constellation. Following a Memorandum of Understanding signed in July 2019, this \$600M (CAD) agreement enables Internet and mobility service providers to acquire Telesat LEO capacity at substantially reduced rates to bring universal broadband connectivity to rural, Northern and Indigenous communities across Canada. Telesat will be eligible to receive amounts under the agreement over a ten year period once the Telesat LEO constellation enters service. With just 41% of rural households and only approximately one quarter of Indigenous communities in Canada having access to fast, reliable broadband Internet service today, delivering affordable, high quality connectivity to all of Canada is essential. Telesat LEO will provide the reliable, secure, fibre-like broadband connections needed to bridge the digital divide in Canada, ensuring that Canadians living in rural and remote communities have access to affordable high-quality broadband that meets the Canadian Radio-television and Telecommunications Commission's (CRTC) goal of at least 50 Mbps download, 10 Mbps upload speeds with unlimited data.

Comtech to Support State of Maryland Department of Human Services with IT Services

November 9, 2020 - Comtech Telecommunications Corp. announced today that during its first quarter of fiscal year 2021, its Mission-Critical Technologies group, which is part of Comtech's Government Solutions segment, has been awarded \$3.0 million of additional funding for a 12-month extension on an existing contract to provide the State of Maryland Department of Human Services (DHS) with statewide Technical Operations Support Services (TOSS). To date, Comtech has received \$14.1 million of funded orders against the contract. Comtech and its experienced team members work directly with the personnel of DHS to develop, maintain and support the IT needs of DHS.

Yahsat Announces PMO for Thuraya 4-NGS Satellite Programme

November 9, 2020 - The UAE-based global satellite operator, Al Yah Satellite Communications Company (Yahsat) has established a Programme Management Office (PMO) for Thuraya 4-NGS, its new L-band satellite being built by Airbus. Thuraya 4-NGS, announced in August this year, is part of a US\$ 500 million programme that will transform Thuraya's space and ground systems and enable its next generation products and solutions portfolio. Yahsat has picked six male and female Emirati engineers from its Technology Department to form the PMO, which will oversee the design, assembly, integration and testing phases of the satellite subsystems, while focusing on the timely delivery of the spacecraft for launch in late 2023.

Spacecom Partners with Spacecom's AMOS-17 Satellite and hiSky's Smartellite™ Ka-band Network

November 9, 2020 - hiSky Ltd. has partnered with Spacecom operator of the AMOS satellites fleet, to launch services via the AMOS-17 satellite. As an affordable network operator, hiSky has brought innovative technology to the field of voice and data satellite communications, connecting people and devices in the most remote locations, even on the move. The company's Smartellite™ Ka and Ku band terminals provide global coverage of its services, both onshore and offshore, meeting a growing demand for low and medium data rates for IoT applications across a range of industries, including fisheries, fleet management, agriculture, oil & gas and more. The AMOS-17 is an advanced digital tri-band satellite. Its digital payload capabilities offer extensive C-Band HTS coverage, regional Ku-Band and steerable Ka-band HTS beams that can be combined to maximize throughput and efficiency. Located optimally at 17 degrees East, it covers all of EMEA, with the Ka-band steerable beams able to provide services from Asia in the east to Brazil in the west. Its unique tri-band digital payload offers secure and resilient satcom solutions over major areas of

interest. hiSky and Spacecom entered into a partnership to explore the potential for streamlining hiSky's system and increasing data rates of very small mobile terminals by enabling connectivity via the AMOS-17 powerful steerable beams. A series of successful field trials, in which typically shown speeds of less than 30 Kpbs, have been dramatically increased to 125 Kpbs on the advanced AMOS-17 satellite. Thus, opened the door to additional IoT services being facilitated by hiSky, in a variety of new applications and at higher speeds.

Optus and University of South Australia Collaboration to Drive Cyber Security and Data Science Innovation in SA

November 6, 2020 - Optus and the University of South Australia (UniSA) have announced a new strategic alliance designed to deliver research outcomes that drive technology innovations and educate Australia's next generation of cyber security and data science specialists. The joint venture will establish an Optus and UniSA led Cyber Security Research and Collaboration Hub in the Australian Cyber Collaboration Centre (A3C) in Adelaide's innovation precinct, Lot Fourteen. The hub brings together industry, customers, partners, academics and students under one roof to solve some of the most complex cyber issues and pave the way for new products and services. Students will have opportunities for real world engagement with industry and business while they are studying in a hub, that will see academics, students and technical and business experts working side by side. Already partners in Lot Fourteen's Massachusetts Institute of Technology (MIT) Living Lab project, launched in 2019, the Optus and UniSA alliance will further support the Lab's leadership in data analytics and machine learning. Optus and UniSA will appoint a joint Chair of Cyber Security and Data Science to provide leadership, foster excellence in teaching and high-impact research across the University and at Lot Fourteen. The alliance will deliver multi-disciplinary education courses for undergraduate and postgraduate students, along with the creation of a joint research and innovation fund to develop and attract innovation to South Australia.

ST Engineering and Polyverse Join Forces on Leading Cybersecurity for Mission-Critical Platforms

November 5, 2020 - ST Engineering and cybersecurity solutions provider Polyverse Corporation today announced a strategic partnership to provide leading-edge, secure operating systems solutions for critical platforms, a game changer in the evolving cloud and Internet of Things (IoT)/edge computing landscape in the Asia-Pacific region. With an increasing proliferation of cyberattacks that undermine the security of critical operating systems, the need for advanced and innovative security solutions that prevent zero-day attacks is heightened. Drawing on ST Engineering's established capabilities in mission-critical information and communications technology (ICT) for global government and commercial customers and Polyverse Corporation's groundbreaking technology and expertise in secure operating system solutions, both companies will collaborate to reinforce mission-critical platforms with an additional sphere of security that's unique to each operating system, across the spectrum of hardware, software and operating system layers in both on-premise and cloud environments.

INRED and SES Networks Expand Wi-Fi Access across Colombia

November 4, 2020 - On the heels of a widely-successful deployment of 1,000 free community Wi-Fi zones connecting more than 700,000 underserved Colombians nationwide in 2019, local services provider INRED and SES Networks have completed the delivery of 300 additional broadband hotspots across rural areas to help close the country's digital divide. The additional sites were deployed in record time and were part of Colombia's Sustainable Universal Access project administered by the Colombian Ministry of Telecommunications. All 1,300 Wi-Fi zones in 424 municipalities across 20 departments are providing high-speed broadband services to nearly one million people and are enabled by SES Networks' Signature Enterprise Solutions over the SES-14 satellite, which provides full coverage over Latin America, the Caribbean and the North Atlantic, SES announced today. INRED and SES Networks were also selected by the Colombian Government to carry out a social connectivity initiative to benefit the people of the Archipelago of San Andrés, Providencia and Santa Catalina, two Caribbean island groups northwest of mainland Colombia, where satellite-enabled connectivity is now being delivered to 12 training schools and Colombian National Navy posts.

Globalsat Group Successfully Tests Iridium Edge® Pro

November 4, 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.

Inmarsat Extends Partnership with CSG to Empower Cloud-Based Monetisation of Its Mobile Broadband Services

November 4, 2020 - CSG has expanded its relationship with Inmarsat, a leader in global, mobile satellite communications. As part of this multi-year agreement, Inmarsat is moving its billing and revenue management operations to a consolidated, cloud-based managed services model developed by CSG, replacing existing third-party and bespoke legacy solutions. By utilising the CSG managed services solution, the British operator will benefit from increased process agility, go-to-market flexibility, and access to precision insights across all operations, while streamlining billing operations and lowering operating expenditures that were associated with prior third-party solutions. The new agreement deploys the latest versions of CSG Singleview, CSG Interconnect, and CSG Intermediate, already in use by Inmarsat, helping them maximise profitability, reduce operational costs, and meet customer demands in real-time. Additional capabilities facilitate proactive identification and resolution of customer issues. In its entirety, the new cloud-based solution provides a future-proof architecture that takes advantage of best practices in billing and revenue management and enhances the customer experience.

Viasat Wins UK Ministry of Defence Contract to Supply Ultra High Frequency Satellite Communications Equipment on the Royal Navy Type 31 Frigate

November 4, 2020 - Viasat UK announced today it was awarded a contract to provide Ultra High Frequency (UHF) satellite communications (SATCOM) for the new Type 31 frigates, to be delivered by Babcock Team 31, for the Royal Navy. UHF SATCOM is a mission-critical capability that will provide the Type 31 frigates with secure integrated voice and data services for communications between Royal Navy maritime vessels and headquarters. It allows commanders to remain informed and aware of the fleet disposition. It is also a vital component to enable maritime task group operations, extensively providing secure beyond line of sight (BLOS) communications between ships and mobile units such as sea boats, boarding teams and helicopters, which are all key elements of tactical combat and constabulary maritime operations.

ST Engineering iDirect Provides High-performance Ground System for SES O3b mPOWER

November 3, 2020 - ST Engineering iDirect, a global leader in satellite communications, has announced that it will provide its high-performance ground infrastructure for O3b mPOWER, SES's next-generation Medium Earth Orbit (MEO) communications system. Pairing ST Engineering iDirect's breakthrough ground technology with spacecraft innovations, O3b mPOWER will enable a flexible, low-latency, high-speed, fiber-like experience for industry segments that include telecommunications/Mobile Network Operator, government, aerospace, cruise, offshore energy, mining and commercial shipping. The O3b mPOWER system is a critical innovation milestone for the satellite industry. ST Engineering iDirect's high-performance ground technology is key to optimizing the end-to-end capabilities of the MEO constellation for delivery of highly efficient networks with highly reliable services.

Advantech Wireless Technologies Releases Ultra-High Power SSPA System for TT&C and Deep Space Communications

November 3, 2020 - Advantech Wireless Technologies announced the release of its DeepBlu-Series 8.5kW Wideband C-Band Modular SSPA System for LEO, MEO and GEO applications that include Satellite Telemetry, Tracking, and Control (TT&C) and Deep Space Communications. The newly designed DeepBlu-Systems consist of multiple high-power SSPAs packaged in ruggedized, outdoor enclosures and integrated into a single frame structure that includes combiners, loads, power distribution and M&C – perfectly suited for fixed and full motion antenna installations. Modular architecture with 1:N built-in redundancy and field replaceable amplifiers minimizes downtime, resulting in the highest service availability in the industry.

iDirect Government's Mew Evolution 4.2.2.0 Technology Advancements Support Multi-layer Cybersecurity

November 3, 2020 - iDirect Government (iDirectGov), a leading provider of satellite communications to the military and government, today announced that the Evolution® platform has been enhanced with information assurance (IA) and cybersecurity as a part of a multi-layered approach to security. Two main

technology advancements in Evolution 4.2.2.0 include SHIELD, a security service for remotes, and Communication Signal Interference Removal (CSIR™), a real-time streaming technology to mitigate interference. These enhancements are fully integrated across iDirectGov's 9-Series satellite modems. To address vulnerabilities in satellite modems, SHIELD provides periodic IA security updates for the 9-Series modems. These remote-side packages are created using the same capability that the Defense Information Systems Agency's (DISA's) Assured Compliance Assessment Solution (ACAS) recognizes. When installed, SHIELD addresses vulnerabilities based on the Common Vulnerabilities and Exposures (CVE) and Nessus ID database on the satellite modem and delivers IA posture across the SATCOM network.

Inmarsat to Develop Innovative Satellite Communications Service Platform for Global Government Customers via New ESA Contract

November 2, 2020 - Inmarsat has been awarded a three year contract with the European Space Agency (ESA), which will co-fund the development of a new capability for governments to plan, procure, manage and monitor their satellite communications (satcoms) services from Inmarsat and other operators and service providers. The new Inmarsat capability, called the International Virtual Satellite Operators Network (INVISION), is a secure, user centric platform. It is being supported by ESA as part of its Space Systems for Safety and Security (4S) Strategic Line, which is a new component of ESA's programme of Advanced Research in Telecommunication Systems (ARTES), aimed at transforming R&D investment into successful commercial products and services. The INVISION programme will also see the development of new and innovative government services and applications that will be accessible in a uniform and user-friendly way over the INVISION platform. Examples include a ground breaking new security hardened Internet of Things (IoT) solution that will be deployed with government users to monitor critical infrastructure and geohazard events in Norway and the UK. Software applications will be developed to enable highly effective bandwidth optimisation for mission critical imagery and video delivery over satellite and the integration of new government services from Inmarsat's future Highly Elliptical Orbit satellites over the Arctic region (GX10A and 10B) – a world's first.

Speedcast Completes Sale of Speedcast Managed Assets to NBN

November 2, 2020 - Following a two-year partnership, which has delivered NBN Co's Business Satellite Services to businesses across Australia, Speedcast International Limited has announced it has sold selected functions of its wholly-owned subsidiary and dedicated entity, Speedcast Managed Services, to Australian government-owned infrastructure provider, NBN Co. Speedcast Managed Services helped build and operate the Business Satellite Service on NBN Co's satellite network. This included the design, integration and commissioning of the new network on NBN high throughput satellite (HTS) systems, with more than 50 beams and a comprehensive terrestrial infrastructure capable of providing a range of high-data internet service offerings. The network design included the development of unique operations support system (OSS) and business support system (BSS) environments. This network went live on 30 Sept 2019 and Speedcast Managed Services has been operating it on behalf of NBN Co. Under the sale, Speedcast Managed Services employees, assets and equipment now revert to its sole client, NBN Co, to support the ongoing requirements of the National Broadband Network. Accordingly, the Master Equipment and Services Supply Agreement (MESSA) signed between NBN Co and Speedcast on 2 February 2018 will come to an end with immediate effect. Speedcast will continue to work as a Retail Service Provider to deliver NBN Co's Business Satellite Services, building on its long-time presence in Australia providing managed connectivity services to enterprise, government, energy and maritime customers.

BROADCAST

Telefónica Servicios Audiovisuales and HISPASAT Renew Agreement to Distribute Iberian AMC Networks

November 24, 2020 - HISPASAT, Red Eléctrica Group's Spanish telecommunications satellite operator, has renewed its agreement with Telefónica Servicios Audiovisuales (TSA), a company belonging to the Telefónica group that specialises in audiovisual services and solutions, to broadcast the contents of the AMC Networks International channels for Spain and Portugal. The three-year agreement will offer subscribers in these countries 14 channels that belong to AMC Networks International Southern Europe, the largest independent thematic TV channel producer in Spain and Portugal. HISPASAT currently distributes audiovisual contents from its 30th West orbital position to more than 10,000 cable headends, which means that more than 65 million homes receive content thanks to HISPASAT's fleet.

TRT World Expands Global Reach via Azerbaijan's Azerspace-1 Satellite

November 18, 2020 - The Turkish public broadcaster TRT's international news platform TRT World is now available on Azercosmos Azerspace-1 satellite located at 46.0 °E. Azercosmos which operates Azerspace-1, Azerspace-2 and Azersky satellites provides video and data services and solutions to its customers across more than 50 countries in Central Asia, Europe, Africa and Middle East. Through this partnership, both companies aim at better serving global viewers who look for a reliable source of information. Founded in 2015 with studios in Istanbul, London and Washington D.C., TRT World broadcasts in English language to communicate a Turkish perspective on current affairs to global audience. As the international face of Turkish Radio and Television Corporation (TRT) – a European Broadcasting Union founding member – TRT World hopes to encourage dialogue between viewers by offering a different viewpoint on current affairs.

Russian Digital Services Operator Tricolor Deploys an Advanced Omnichannel Contact Center with Orange Business Services

November 16, 2020 - Russian digital services operator Tricolor has turned to Orange Business Services to modernize its customer service activities, leveraging technology from Genesys, a global leader in cloud customer experience and contact center solutions. Tricolor provides digital services, including satellite television and video streaming, for 12.2 million households throughout Russia. By deploying Genesys Engage, the omnichannel and multi-cloud customer engagement solution to be used by hundreds of operators, Tricolor can now interact with its customers all across the country via voice, chat, social networks, instant messaging and e-mail by seamlessly using a single platform. The solution allows Tricolor to maintain the level of service regardless of communications channel. Tricolor can now also use speech analytics, allowing it to identify the reason for customers' calls. This in turn provides the company valuable data insights in order to optimize internal processes and allow further self-service provision to end customers. Working with Orange Business Services since 2018, Tricolor deployed this new solution on top of its existing infrastructure. The seamless transition to the new platform took only six weeks and did not impact current business processes nor the quality of services provided. Orange Business Services experts first conducted an audit of the contact center's internal procedures to draw up an analysis of functionality requirements. All stages of the contact center implementation were carried out in close cooperation with Tricolor.

USSI Global Launches C-Band Transition Service for Broadcast and Cable Networks

November 9, 2020 - USSI Global has launched a new C-Band Mitigation Interference service for broadcast and cable networks affected by the forthcoming C-Band Transition. Similar to the recent TV spectrum repack in the United States, the FCC initiative will clear the lower 300MHz of the C-Band for 5G services, and reassign affected operators to the remaining 200MHz by 2025. The auction process begins December 8, with relocation deadlines in late 2021, 2023 and 2025. USSI Global's C-Band Mitigation Interference service provides a full range of project management services from site inspection through installation and commissioning, including modernization of all satellite systems and infrastructure. The plan includes a dedicated team of experienced RF and satellite engineers for each project, along with a managed services option that offloads network operation, monitoring and maintenance to USSI Global technicians. USSI Global will also offer a dedicated 24/7/365 call center to provide immediate response for troubleshooting and repairs.

The Switch Teams with Aruji to Expand Global Content Delivery Network

November 10, 2020 - The Switch, the platform for the production and global delivery of live video, has teamed up with Aruji, one of Japan's leading transmission and production services providers, to extend the global reach of its combined transmission networks. The agreement allows The Switch and Aruji's customers to leverage live feeds from more events and seamlessly distribute them via a reliable and robust international network. As part of the deal, Aruji benefits from a direct link between its Tokyo facility and The Switch's Los Angeles Network Operations Center (NOC), allowing the Japanese service provider to tap into The Switch's connections to premier stadiums and arenas in the US to access live events such as concerts and live sports. The Switch will have access to similar venues and events in Japan, including horseracing and boxing, as well as Aruji's teleports and production capabilities.

ATEME and The Explorers to Launch the First OTT Channel Promoting VVC

November 10, 2020 - ATEME, the leader in video delivery solutions for Broadcast, Cable TV, DTH, IPTV and OTT, and The Explorers, a collaborative global media platform, announced launching, the first OTT live channel which promotes the beauty of the world's landscapes via the next gen codec, VVC. The channel

will be hosted from Tuesday, November 10th to Friday, December 11th on Akamai CDN. As a part of the global project of the planet inventory, The Explorers aim to truly contribute to the preservation of natural, cultural, and human heritage worldwide via the latest technologies. The OTT channel, launched with ATEME for a month period, falls within this respect and promotes the beauty of our planet by capturing amazing content in HDR up to 8K. VVC published as ITU H.266 | ISO/IEC 23090-3, is a new video standard which reduces by half the bitrate at the same video quality. With video accounting for about 80 per cent of global internet traffic, VVC ease pressure on global networks and reduces the amount of data necessary to enable high-quality video for an unprecedented range of new and existing applications.

iKO Media Group Expands Kazakh TV Distribution with HD Distribution over MEASAT

November 9, 2020 - iKO Media Group, a global end-to-end service provider for broadcasters and content owners, has been collaborating with Kazakh TV, Kazakhstan's first national satellite television channel, for over 3 years. In the most recent upgrade with the channel, iKOMG will be offering Kazakh TV distribution service in HD over the MEASAT-3a satellite. With HD distribution from iKO, Kazakh TV will be able to offer its channel, including live streaming, in HD quality to all its viewers around the globe. This upgrade to HD for Kazakh TV is part of iKO Media Groups' overall strategy to offer top of the line, advanced services to its client base.

NAGRA Content Protection Solutions Selected by Canal+ Group for Satellite Operator M7

November 4, 2020 - NAGRA announced that Canal+ Group, the leading French audiovisual media group, has selected NAGRA content protection technologies to secure pay-TV services for M7, the Luxembourg-based satellite operator it acquired in 2019, across new and legacy set-top boxes. NAGRA Protect and Guard solutions provide both card-based and cardless content protection and meet stringent studio requirements for premium 4K Ultra HD and early release content. NAGRA Protect is a cardless-without-compromise security client that provides an unprecedented level of security for a software-based solution, that boasts the largest certified system-on-chip (SOC) and set-top box partner network, giving service providers more freedom of choice when selecting the chip and set-top box that best meets their needs. NAGRA Guard is a smart-card based solution that delivers supports any business feature in the market and is designed to withstand even the most advanced hack attempts. M7 operates in the Netherlands, Belgium, Austria, Czech Republic, Slovakia, Hungary, Romania and Germany. The operator has approximately 2.5 million subscribers.

Eutelsat Launches Sat.tv, its Enhanced Electronic Program Guide for Free-to-Air Channel

November 3, 2020 - Eutelsat Communications has successfully launched Sat.tv, its enhanced Electronic Program Guide for FTA channels. The service is already operating at the 7/8° West position, serving over 56 million Arabic-speaking homes across the Middle East and North Africa and is being progressively deployed at other Eutelsat video neighborhoods. Sat.tv gives TV audiences an unparalleled Free-to-Air user experience, with the broadest content visibility, while enabling broadcasters to maximize their reach and increase their ability to target specific viewers.

NOVELSAT Picks HPE ProLiant Servers to Drive Broadcast and Spectrum Transformation for 5G

November 2, 2020 - NOVELSAT, a global leader in content connectivity over satellite, announced today that through an OEM partnership with Hewlett Packard Enterprise (HPE), a global edge-to-cloud platform-as-a-service company, it has selected the HPE ProLiant servers to power its high performance video gateways. Media and broadcast service providers face increased demand for higher quality content over multiple distribution channels, as well as bandwidth and spectrum challenges amid spectrum repurposing for 5G. NOVELSAT unique video solutions allows customers to expand, modernize and transform their video connectivity and delivery network, gaining higher transmission and video coding efficiencies as well as enjoying advanced capabilities, new services and flexible deployment options. NOVELSAT will utilize HPE ProLiant servers to power NOVELSAT FUSION, an advanced end-to-end live linear platform for broadcast and broadband content connectivity and delivery. Expanding flexibility and scalability, NOVELSAT FUSION delivers optimal video efficiency, processing, delivery and security solutions by technology innovation across the media network.

LAUNCH / SPACE

Momentus Announces New Launch and Transportation Service with Australia's Gilmour Space

November 30, 2020 - Momentus and Gilmour Space Technologies today announced a new agreement for launch and orbital transport services. Under the agreement, Momentus will gain access to low inclination

and equatorial orbits using Gilmour Space's Eris launch services. With Momentus' Vigoride transportation service, Gilmour Space will have the capability to expand the flight domain of the Eris rockets (the company has several larger models planned coming to market beginning in 2023) and enable constellation deployments and missions beyond low Earth orbit (LEO). Gilmour Space has the option to book up to three Vigoride charter missions for orbital transfer services from Momentus over the 2023-2025 period, while Momentus will purchase one dedicated Eris launch service from an Australian launch site. Gilmour Space is a venture-backed rocket company in Queensland, Australia that is developing new launch vehicles powered by lower-cost hybrid propulsion technologies. The Eris launch vehicle will debut its services in 2022 and offer lift-off capability to LEO in the 300kg class. A more capable variant, Eris Heavy, is intended to be commercially available in 2025 with a lift off capacity up to two tons. The Eris family of launch vehicles will launch from Australian and international launch sites, offering access to low inclination as well as Sun-synchronous orbits.

Thales Alenia Space Puts on Track its Space Inspire Product Line

November 27, 2020 - Thales Alenia Space has announced that a major milestone for Space Inspire (INstant SPace In-orbit REconfiguration) development has been achieved by the accomplishment of the Preliminary Design Review (PDR). Thales Alenia Space is developing this innovative product line with the aim to allow seamless telecommunication mission and services reconfiguration, instant in-orbit adjustment to the demand, outstanding flexibility for video broadcasting and broadband connectivity services while maximizing the efficiency & effective use of the satellite resources. This product line is supported by France's space agency (CNES) with which a contract for satellite system engineering and development for phase CD activities has just entered into force in the frame of Space Inspire PIA (Plan d'Investissement d'Avenir), and by the European Space Agency's through a dedicated Partnerships Project contract which has also entered into force and which will develop several building blocks outside France within an extensive European supply chain. Following this Preliminary Design Review, Space Inspire product line is now entering into final design and qualification phases involving an industrial consortium all across Europe.

ESA and ClearSpace SA Sign Contract for World's First Debris Removal Mission

November 26, 2020 - ESA is signing an €86 million contract with an industrial team led by the Swiss start-up ClearSpace SA to purchase a unique service: the first removal of an item of space debris from orbit. As a result, in 2025, ClearSpace SA will launch the first active debris removal mission, ClearSpace-1, which will rendezvous, capture and bring down for reentry a Vespa payload adapter. Journalists are invited to follow an online round table for media on Tuesday, 1 December, at 13:30 CET. Mission experts will give an overview of the project status, explain the ambitious mission design and detail the next steps leading to launch. At ESA's Space19+ Ministerial Council, ministers granted ESA the funding to place a service contract with a commercial provider for the safe removal of an inactive object from low Earth orbit. Following a competitive process, an industrial team led by ClearSpace SA – a spin-off company of the Ecole Polytechnique Fédérale de Lausanne (EPFL) – was invited to submit the final proposal. With this contract signature, a critical milestone for establishing a new commercial sector in space will be achieved. Purchasing the mission in an end-to-end service contract, rather than developing an ESA-defined spacecraft for in-house operation, represents a new way for ESA to do business. ESA is purchasing the initial mission and contributing key expertise, as part of the Active Debris Removal/ In-Orbit Servicing project (ADRIOS) within ESA's Space Safety Programme. ClearSpace SA will raise the remainder of the mission cost through commercial investors.

RSS to Provide Digital Communication with the ISS via Russian Satellites

November 25, 2020 - Russian Space Systems Holding (RSS, part of Roscosmos) has upgraded the Klen-R command and measurement system, which is used to communicate with the Soyuz MS, Progress MS transport spacecraft and the Russian segment of the International Space Station. Klen-R with a broadband communication system will allow switching to high-speed digital video communication with the crew and will quadruple the radio visibility area of the ISS Russian segment. Today, Orion ground complexes are used to communicate with the station, the reception area of which is limited to the territory of Russia, and the time for receiving a television image in analog format is no more than 20 minutes per orbit. To switch over to digital information exchange, RSS specialists have equipped the Klen-R with a broadband communication system modem. The modified system is now undergoing experimental testing at Rocket and Space Corporation Energia (part of Roscosmos). The Klen-R command and measurement system was developed by RSS in 2010. Now Klen-R ground stations operate in Moscow, Zheleznogorsk and at the Vostochny Cosmodrome. The system is designed to control and exchange information with spacecraft for

scientific and socio-economic purposes, crewed space complexes, orbital stations, upper stages through the relay satellites of the Luch multifunctional space relay system.

Rocket Lab to Launch Dedicated Mission for Japanese Earth Imaging Company Synspec

November 24, 2020 - Rocket Lab has today announced Japanese Earth-imaging company Synspec as the customer for Rocket Lab's 17th Electron launch, and its seventh mission of the year. The dedicated mission for Synspec is scheduled for lift-off during a 14-day launch window opening on 12 December UTC and will launch from Rocket Lab Launch Complex 1 on New Zealand's Māhia Peninsula to a targeted 500km circular low Earth orbit. The mission is named 'The Owl's Night Begins' in a nod to Synspec's StriX family of synthetic aperture radar (SAR) spacecraft developed to be able to image millimetre-level changes to the Earth's surface from space, independent of weather conditions on Earth and at any time of the day or night. The StriX-α satellite onboard this mission will be the first of a series of spacecraft deployments for Synspec's planned constellation of more than 30 SAR small satellites to collate data of metropolitan centers across Asia on a daily basis that can be used for urban development planning, construction and infrastructure monitoring, and disaster response. For this mission, Rocket Lab will utilize a custom expanded fairing to encompass Synspec's wide-body satellite – the first use of the expanded fairing options that Rocket Lab recently introduced alongside a suite of vehicle performance improvements, including advances in battery technology which enable an improved payload lift capacity up to 300 kg (660 lbs). Rocket Lab will also perform an advanced mid-mission maneuver with its Kick Stage space tug that will shield the StriX-α satellite from the sun to reduce radiation exposure ahead of payload deployment.

Gilmour Space and Northrop Grumman Sign MoU to Grow Sovereign Capabilities in Australia

November 24, 2020 - Gilmour Space Technologies and Northrop Grumman have signed a Memorandum of Understanding (MOU) to support the development of Australian sovereign space capabilities. As an initial task under the MOU, Northrop Grumman will join Gilmour Space as an industry partner on a previously announced Cooperative Research Centre Project (CRC-P) to develop composite rocket tanks for low cost space transport. The CRC-P, which includes Griffith University and Etamax Engineering, will manufacture composite tanks up to two metres in diameter and trial them in rocket flights, in an effort to reduce weight and increase reliability. Northrop Grumman recently sought expressions of interest from a range of Australian and New Zealand industry members, through the Industry Capability Network Gateway Portal, which included small businesses, with the goal to identify and collaborate with industry to develop Australian space capabilities. Northrop Grumman remains committed to enhancing its business and geographic footprint in the Commonwealth of Australia as a key contributor to the Australian Space industry. The company has a strong customer base in Australia where it has been supporting numerous defence and civil programs for more than 20 years.

Firehawk Aerospace Raises \$2 Million for Next Generation Rocket Engines

November 24, 2020 - Firehawk Aerospace has closed a \$2 million seed round. The round is led by members of the Victorium Capital Club and includes additional investments from Achieve Capital and Harlow Capital Management. Firehawk Aerospace is providing customizable propulsion systems to make the future of space transportation safer and more accessible. The funds will be used to test Firehawk's engine at operational scale, grow its partnerships with leading government and commercial entities around the world, and expand its research and manufacturing facilities to Texas and Oklahoma. Firehawk Aerospace was hand-picked among thousands of applicants to participate in Startup Battlefield, the world's preeminent startup competition, at TechCrunch Disrupt 2020. The Company was selected as one of five finalists by a panel of judges including multiple venture capital and tech leaders.

New Copernicus Satellite to Monitor Sea-level Rise Launched on SpaceX Falcon 9 Rocket

November 21, 2020 - ESA) The Copernicus Sentinel-6 Michael Freilich satellite has been launched into orbit around Earth on a SpaceX Falcon 9 rocket. Using the latest radar altimetry technology, this new satellite is set to provide a new overview of ocean topography and advance the long-term record of sea-surface height measurements that began in 1992 – measurements that are essential for climate science, for policy-making and, ultimately, for protecting the lives of millions at risk of sea-level rise. Carrying the 1.2 tonne Sentinel-6 satellite, the Falcon 9 rocket lifted off from the Vandenberg Air Force Base in California, US, at 17:17 GMT (18:17 CET, 09:17 PST) on 21 November. The satellite was delivered into orbit just under an hour after liftoff and contact was established at the ground station in Alaska at 19:49 CET. Now in orbit, Copernicus Sentinel-6 Michael Freilich will soon pick up the baton and extend this dataset – a dataset that is the 'gold standard' for climate studies. The mission comprises two identical satellites

launched sequentially – so in five years, Copernicus Sentinel-6B will be launched to take over. The mission as a whole will ensure the continuity of data until at least 2030. Each satellite carries a radar altimeter, which works by measuring the time it takes for radar pulses to travel to Earth's surface and back again to the satellite. Combined with precise satellite location data, altimetry measurements yield the height of the sea surface.

Rocket Lab Launches 16th Mission, Completes Booster Recovery

November 20, 2020 - Rocket Lab has successfully launched its 16th Electron mission and deployed 30 small satellites to orbit – the largest number of satellites deployed by Electron to date on a single mission. The 'Return to Sender' mission also saw Rocket Lab complete a successful splashdown and recovery of the first stage of an Electron launch vehicle for the first time, bringing the stage back to Earth under a parachute after launch. The recovery of a stage is a major milestone in Rocket Lab's pursuit to make Electron a reusable rocket to increase launch frequency and reduce launch costs for small satellites. Approximately two and a half minutes after lift-off, at an altitude of around 80 km, Electron's first and second stages separated per standard mission procedure. Once the engines shut down on Electron's first stage, a reaction control system re-oriented the stage 180-degrees to place it on an ideal angle for re-entry, enabling it to survive the incredible heat and pressure known as "The Wall" during its descent back to Earth. A drogue parachute was deployed to increase drag and to stabilize the first stage as it descended, before a large main parachute was deployed in the final kilometers of descent. The stage splashed down as planned. Rocket Lab's recovery team will transport the stage back to Rocket Lab's production complex, where engineers will inspect the stage to gather data that will inform future recovery missions. The 'Return to Sender' mission launched from Rocket Lab Launch Complex 1 on New Zealand's Māhia Peninsula at 15:20 NZT, 20 November 2020, deploying satellites for TriSept, Swam Technologies, Unseenlabs, and the Auckland Programme for Space Systems at The University of Auckland. The mission brings the total number of satellites launched by Rocket Lab to 95. Among the payloads deployed were satellites designed to test new methods of deorbiting space debris, enable internet from space, and build upon a maritime surveillance constellation. The mission also saw New Zealand's first student-built payload deployed to orbit, the APSS-1 satellite which is designed to monitor electrical activity in Earth's upper atmosphere to test whether ionospheric disturbances might be linked to earthquakes. Rocket Lab sponsored the project by providing the launch at no cost to the University of Auckland.

Voyager Space Holdings to Acquire The Launch Company

November 19, 2020 - Voyager Space Holdings today announced its intent to acquire The Launch Company, subject to customary closing conditions. The Launch Company specializes in developing standardized hardware, ground support equipment, and processes to help next generation space companies gain access to orbit faster, cheaper, and more reliably. The Launch Company has worked with Virgin Orbit, Relativity Space, Firefly Space, Altius Space Machines, Pacific Spaceport Complex – Alaska, Aurora Launch Services, and more, while also participating in the DARPA Launch Challenge. This will be Voyager's first acquisition in the launch category, a crucial component in the space supply chain. Based in Anchorage, Alaska, The Launch Company was established to help both NewSpace commercial clients, as well as DOD and USAF assets, get to space faster and more affordably by streamlining the launch process, in part through automation. The company is working to build the world's first multi-user mobile launch site to help fill the gap between launch site demand and availability. They were recently selected among the top finalists in this year's AFWERX Challenge and are pursuing a prototype of their site design. The Launch Company's goal with this new site is to be able to service the widest range of launch vehicles in the market, including small to large vehicles for both launch and landing operations.

AAC Clyde Space contracted for 19.7 MEUR in innovative constellation services with ESA and UKSA

November 18, 2020 - AAC Clyde Space embarks on a 3-year project, named xSPANCION, with the European Space Agency (ESA) to develop an innovative satellite constellation service, including the manufacturing of 10 spacecrafts. The UK Space Agency through ESA, will co-fund the project with 9.9 MEUR (approx. 101.4 MSEK). AAC Clyde Space intends to, outside this project, enter into customer service agreements for data delivery from the constellation. During the first phase of the project running until mid-2021, AAC Clyde Space will deliver a preliminary design for its next generation space as a service offering. The value of this first phase is 1.8 MEUR (approx. 18.4 MSEK) of which 0.9 MEUR (approx. 9.2 MSEK) will be co-funded by UK Space Agency through ESA, providing sufficient resources to achieve comfortably this part of the project. The co-funding from UK Space Agency will be recognized as revenue with no net margin since AAC Clyde Space and partners will co-fund the remaining 0.9 MEUR (approx. 9.2 MEUR).

Astroscale Announces March 2021 Launch Date for World's First Commercial Active Debris Removal Demonstration Mission

November 18, 2020 - Astroscale today announced that its End-of-Life Services by Astroscale-demonstration (ELSA-d) mission will launch on a Soyuz rocket operated by GK Launch Services from Baikonur Cosmodrome, Kazakhstan, in March 2021. Decreased launch and satellite development costs, an increasing global dependence on data from space and the rise of large commercial satellite constellations have led to a rapidly increasing population of objects in low Earth orbit (LEO). This growing use of space brings significant benefits to society but also greatly increases the threat of collision or break-up. This growing potential for additional debris creation endangers current and future satellite missions and puts society's reliance on data from space at risk. ELSA-d will demonstrate a valuable service by safely removing defunct satellites from orbit to maintain the viability of LEO. The ELSA-d mission will demonstrate multiple dynamically complex capture activities necessary to remove defunct objects from orbit using an innovative approach consisting of a servicer (~175kg) and a client (~17kg), launched together. The servicer, equipped with proximity rendezvous technologies and a magnetic capture mechanism, will repeatedly release and dock with the client, which has been prepared with a ferromagnetic docking plate. Astroscale intends to prove the capabilities required for debris removal, including client search, inspection and rendezvous, and both non-tumbling and tumbling docking.

MDA Receives Commercial Contracts for On-orbit Servicing Technologies

November 17, 2020 - MDA today announced that it has signed multiple contracts with Maxar Technologies to provide advanced space robotics technologies for the Space Infrastructure Dexterous Robot (SPIDER), a technology demonstration on NASA's On-orbit Servicing, Assembly, and Manufacturing 1 (OSAM-1) mission. MDA will deliver an enabling technology suite of advanced robot control software and interfaces to help achieve assembly and servicing tasks never done to date. MDA will also deliver the Motor Control Electronics and Arm Control Electronics on the SPIDER robotic arm. These essential components drive and control each of the motors and joints of the arm as well as providing the data routing and interfacing between joints and cameras. The work on these three contracts will be performed at MDA facilities in Brampton and Ste-Anne-de-Bellevue. These products will be delivered in mid-to-late 2021 and incorporated into Maxar's robotic system. They will not only support the goal of making on-orbit assembly commercially viable, but could also support other on-orbit services like debris removal, anomaly resolution, life extension, and salvage of stranded spacecraft.

NASA's SpaceX Crew-1 Astronauts Headed to International Space Station

November 16, 2020 - An international crew of astronauts is en route to the International Space Station following a successful launch on the first NASA-certified commercial human spacecraft system in history. NASA's SpaceX Crew-1 mission lifted off at 7:27 p.m. EST Sunday from Launch Complex 39A at the agency's Kennedy Space Center in Florida. The SpaceX Falcon 9 rocket propelled the Crew Dragon spacecraft with NASA astronauts Michael Hopkins, Victor Glover, and Shannon Walker, along with Soichi Noguchi of the Japan Aerospace Exploration Agency (JAXA), into orbit to begin a six-month science mission aboard the space station. The Crew Dragon spacecraft, named Resilience, will dock autonomously to the forward port of the station's Harmony module about 11 p.m. Monday, Nov. 16. NASA Television and the agency's website are providing ongoing live coverage through docking, hatch opening, and the ceremony to welcome the crew aboard the orbiting laboratory.

SFL Contracted by GHGSat for Three More Climate Monitoring Microsatellites

November 16, 2020 - Space Flight Laboratory (SFL), a developer of 52 distinct microspace missions, has been awarded a contract by GHGSat of Montreal to build the next three microsatellites in its commercial greenhouse gas monitoring constellation. Greenhouse gas emissions detected and measured by the satellites are processed into emission reports and other products by GHGSat on behalf of a broad range of customers, including energy facilities, government agencies, and environmental organizations. SFL built the pathfinding GHGSat-D (Claire) microsatellite launched in 2016 and then was awarded the contract by GHGSat Inc. to develop the first two commercial service satellites, GHGSat-C1 (Iris) and C2 (Hugo). Iris was launched in September 2020, and Hugo is slated for launch late this year. These satellites were all developed on the SFL 15-kilogram Next-generation Earth Monitoring and Observation (NEMO) microsatellite platform, as will be the case for the next three.

Successful Entry into Service of EUTELSAT KONNECT Satellite

November 16, 2020 - Eutelsat Communications has announced the successful entry into service of its new-generation EUTELSAT KONNECT High Throughput Satellite at the 7° East orbital position. Launched

aboard an Ariane rocket on 16 January 2020, the availability of EUTELSAT KONNECT had been delayed due to Covid-related interruptions in the roll-out of the ground segment, but having now completed its testing, this much anticipated spacecraft is now operational and will gradually ramp up with 80% of the capacity in service by year-end and 100% by March 2021. EUTELSAT KONNECT is an all-electric satellite, built by Thales Alenia Space and the first to use Thales Alenia Space's new Spacebus Neo platform. With 75 Gbps of capacity across a network of 65 spot-beams, it delivers significant resources for broadband services and sets a new benchmark for flexibility in High Throughput Satellites leading to optimized fill rates. EUTELSAT KONNECT also comes with compelling economics, with a cost per sellable Gbps substantially lower than for existing in-orbit assets. Coverage will initially be split between Europe with circa 55% of the capacity focused on high-demand areas namely France, Italy, Germany, Spain, the UK, and Africa where it will considerably supplement and gradually replace the capacity leased from a third-party operator. The availability of EUTELSAT KONNECT marks a major step in Eutelsat's Connectivity strategy, contributing to making 2021 a turning point in Fixed Broadband. The entire French capacity on the satellite has already been contracted on a wholesale basis by Orange. Moreover, Eutelsat's recent acquisition of BigBlu Broadband adds a retail pillar to its distribution network which will accelerate the ramp up of the satellite and prepare the ground for the entry into service of KONNECT VHTS in the course of fiscal year 2022-23.

Thales Alenia Space to Build Copernicus CIMR Satellites

November 13, 2020 - Thales Alenia Space has signed a 93 Meuro, first tranche of the 495 Meuro global contract, with the European Space Agency (ESA) to build the Copernicus Imaging Microwave Radiometer (CIMR) environmental monitoring satellites. The CIMR mission is part of the expansion of the Copernicus Space Component programme of the European Space Agency, ESA, in partnership with the European Commission. The European Copernicus flagship programme provides Earth observation and in situ data and a broad range of services for environmental monitoring and protection, climate monitoring, natural disaster assessment to improve the quality of life of European citizens. Thales Alenia Space will serve as mission prime with main partners OHB Italia for the instrument and HPS (High Performance Space Structure System GmbH) for the Antenna Reflector. This mission is dedicated to provide observations of Sea-Surface Temperature (SST), Sea-Ice Concentration (SIC) and Sea-Surface Salinity (SSS). Uniquely, it would also observe a wide range of other sea-ice parameters as Sea Ice Thickness (SIT), Sea Ice Drift (SID), Ice Type/Stage, Snow Depth on Sea Ice or Ice Surface Temperature (IST). CIMR responds to high-priority requirements from key Arctic user communities and will improve continuity of missions monitoring the Polar Regions, notably in terms of spatial resolution (~5 km) temporal resolution (sub-daily) and geophysical accuracy. CIMR measurement performances are at worldwide state of art.

United Launch Alliance Successfully Launches NROL-101 Mission in Support of National Security

November 13, 2020 - A United Launch Alliance (ULA) Atlas V rocket carrying the NROL-101 mission for the National Reconnaissance Office (NRO) lifted off on Nov. 13 at 5:32 p.m. EST from Space Launch Complex-41 at Cape Canaveral Air Force Station. The NROL-101 mission was the first ULA launch flying the new Northrop Grumman Graphite Epoxy Motors (GEM) 63 solid rocket boosters that burn solid propellant and augment the lifting capacity of rocket's first stage. The GEM 63s measure 63 in. (1.6 meters) in diameter and 66 ft. (20.11 meters) in length. Each GEM 63 produced 371,550 pounds (1.6 mega-Newtons) of max thrust to augment the 860,200 pounds (3.83 mega-Newtons) of thrust produced by the RD-180 main engine to power the Atlas V rocket skyward. At liftoff, the combined thrust was nearly 1.8 million pounds or 8 million mega-Newtons. The mission launched on an Atlas V 531 that included a 17 ft. (5 meter) payload fairing. The Atlas booster for this mission was powered by the RD AMROSS RD-180 engine. Aerojet Rocketdyne provided the RL10C-1 engine for the Centaur upper stage.

Thales Alenia Space to Build Copernicus CHIME Satellites

November 13, 2020 - Thales Alenia Space announced today that it has signed a 90 Meuro first tranche contract with the European Space Agency (ESA) to design and build the 2 environmental monitoring satellites of the Copernicus Hyperspectral Imaging Mission for the Environment (CHIME), the global amount being 455 million euros. The CHIME mission is part of the expansion of the Copernicus Space Component programme of the European Space Agency, ESA, in partnership with the European Commission. The European Copernicus flagship programme provides Earth observation and in situ data and a broad range of services for environmental monitoring and protection, climate monitoring, natural disaster assessment to improve the quality of life of European citizens. Thales Alenia Space will serve as prime contractor and integrator for this program with OHB and Leonardo as main partners for the payload. This mission will carry a unique visible to shortwave infrared spectrometer to provide routine

hyperspectral observations to support new and enhanced services for food security, agricultural and biodiversity management, as well as soil property characterization, sustainable mining practices and environment preservation. The mission, whose instantaneous swath is 128km, will complement Copernicus Sentinel-2 for applications such as land-cover mapping.

Spaceflight Unveils Propulsive Orbital Transfer Vehicles to Launch Smallsats

November 12, 2020 - Spaceflight Inc. announced that it is developing two additional next-generation orbital transfer vehicles (OTVs) that will debut in 2021. Its first, Sherpa-FX, will fly on a fully dedicated rideshare mission with SpaceX, dubbed SXRS-3 by Spaceflight, no earlier than December 2020. The next two ESPA-class space vehicles in the company's portfolio are designed to provide more orbital diversification, including flexible manifest changes, deployment to multiple altitudes and orbital planes, and rapid launch solutions. Sherpa-FX, the first innovative orbital transfer vehicle to debut, is capable of executing multiple deployments, providing independent and detailed deployment telemetry, and flexible interfaces, all at a low cost. This free flyer separates from a launch vehicle prior to deploying any satellites, with satellite separations initiated by onboard avionics once clear of the launch vehicle. It is quickly configurable and can move from vehicle to vehicle and mission to mission. It includes independent, near real-time, worldwide telemetry via GlobalStar. It will carry 14 spacecraft, including hosted payloads, on the upcoming SXRS-3 mission. Sherpa-LTC features a high thrust, bi-propellant, green propulsion subsystem integrated seamlessly within the available space of the original free flyer. Sherpa-LTE is a high specific impulse (Isp), Xenon propellant, electric propulsion OTV.

Northrop Grumman Awarded Additional Cargo Resupply Missions to the ISS

November 11, 2020 - Northrop Grumman Corporation has been awarded two additional missions by NASA under the Commercial Resupply Services contract-2 (CRS-2) with launches occurring in 2023. Northrop Grumman will deliver a combined total of approximately 16,500 lbs. of cargo to the International Space Station during these missions. For the additional missions, Northrop Grumman's Cygnus spacecraft will be carried into orbit by the company's Antares launch vehicle from the Mid-Atlantic Regional Spaceport at NASA's Wallops Flight Facility in eastern Virginia. The company is currently providing resupply services to the station through the CRS-2 contract which began in 2016. Under this contract and the CRS-1 contract, Northrop Grumman has provided more than 150,000 lbs. of cargo logistics for the station.

Omnispace Selects Exolaunch to Deliver Two Next-Generation Satellites

November 10, 2020 - Omnispace signed a launch agreement with Exolaunch. Exolaunch will deliver two Thales Alenia Space-built satellites into orbit aboard SpaceX's rideshare mission. Exolaunch will provide launch, mission management, integration and deployment services for the two Omnispace satellites, targeted for launch in 2022. Omnispace is combining the global footprint of a non-geostationary orbit satellite constellation with the world's leading mobile wireless networks into a seamless 'one global network.' The network will support 3rd Generation Partnership Project (3GPP) and 5G telecommunications standards with the satellite component operating in the S-band. The company aims to set new standards for global connectivity solutions for the internet of things (IoT), mobile satellite and mobile broadband markets. The Omnispace network will be deployed in phases beginning in 2022. The global hybrid network will offer enterprise and government users a reliable, scalable and affordable 5G connectivity solutions worldwide.

Arianespace Announces Latest Ariane 5 Contract, Plans up to Four More Launches by End of Year

November 9, 2020 - Arianespace announced a new contract to launch a communications satellite into geostationary orbit using Ariane 5. With up to four more launches planned by the end of the year, Arianespace sustains its high launch rate despite the impact of the COVID-19 pandemic. The European launch services company has also expanded its Executive Committee and created two new business units. Arianespace announced today that it has signed a contract for an Ariane 5 launch of a communications satellite into geostationary orbit, for an undisclosed operator. The launch is planned for 2022. This contract follows a contract signed with Intelsat in September to launch three satellites, along with 16 Soyuz launches for OneWeb. Ariane 5 still has eight more launches to carry out before it is retired and passes the baton to Ariane 6, scheduled to make its first flight in 2022. Arianespace is gearing up for a very busy year-end, with up to four launches planned in less than six weeks. Despite the impact of the COVID-19 pandemic and a business slowdown, Arianespace could still surpass its operational performance in 2019, by logging a total of ten launches in 2020, including three by Ariane 5, five by Soyuz and two by Vega. Following the creation of two new business units, Arianespace has also expanded and raised the European profile of its Executive Committee.

Successful Launch of Kleos Space Scouting Mission Satellites into 37 Degree Inclined Orbit

November 9, 2020 - Kleos Space has announced the successful deployment of its Scouting Mission satellites (KSM1) following the launch on India's Space Research Organization's (ISROs) Polar Satellite Launch Vehicle (PSLV) C49 from Chennai, India on the 7th November 2020. Kleos' cluster of four satellites have been launched from the Satish Dhawan Space Centre aboard PSLV C49 under a rideshare contract with Spaceflight Inc. Deployment from the launch vehicle into their allocated orbit at 37-degree inclination has occurred and initial communications established. The in-orbit commissioning phase now commences to prepare the satellites to collect data over crucial areas of interest such as Strait of Hormuz, South China Sea, East/West Africa, Southern Sea of Japan, northern Australian coast e.g. the Timor Sea.

Lacuna Space Continues to Grow IoT Constellation with an Equatorial Satellite

November 9, 2020 - Global connectivity provider Lacuna Space announced successful launch and communications with its fourth IoT (Internet of Things) gateway in space. The satellite, carrying a new generation of space gateways, was transported to equatorial low Earth orbit onboard the PSLV-C49 mission from India last Saturday. The mission will cover a geographic band around the entire globe between the 40th parallels North and South, stretching from Madrid all the way down to Cape Town. One of Lacuna's early partners has been Sustainability Tech, a technology systems developer that focuses on tropical forest ecosystems in Southeast Asia. Sustainability Tech is working with Lacuna Space to produce new satellite-connected sensors that monitor wetland hydrology. These enable a variety of companies, from commercial plantation managers to conservation projects such as peatland restoration, to monitor fire risk and water levels from any internet-connected device.

PSLV Successfully Launches EOS-01 and Nine Customer Satellites from Sriharikota

November 7, 2020 - India's Polar Satellite Launch Vehicle, in its fifty first flight (PSLV-C49), successfully launched EOS-01 along with nine international customer satellites from the First Launch Pad of Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota. PSLV-C49 lifted-off at 1511 Hrs (IST), after a delay of nine minutes because of inclement weather conditions observed during countdown. After 15 minutes and 20 seconds, EOS-01 was successfully injected into its orbit. Subsequently, nine commercial satellites were injected into their intended orbits. After separation, the two solar arrays of EOS-01 were deployed automatically and the ISRO Telemetry Tracking and Command Network at Bengaluru assumed control of the satellite. In the coming days, the satellite will be brought to its final operational configuration. EOS-01 is an earth observation satellite, intended for applications in agriculture, forestry and disaster management support. The nine customer satellites from Lithuania (1), Luxembourg (4) and USA(4) were launched under a commercial arrangement with NewSpace India Limited (NSIL). PSLV-C49 is the 2nd flight of PSLV in 'DL' configuration (with 2 solid strap-on motors). Besides being the 51st launch of PSLV, today's launch was also the 76th launch vehicle mission from SDSC SHAR, Sriharikota.

China Sends 13 Satellites into Orbit with Single Rocket, including 6g Test Satellite

November 6, 2020 - China successfully sent 13 satellites into orbit from the Taiyuan Satellite Launch Center in north China's Shanxi Province on Friday. The satellites, including 10 commercial remote sensing satellites developed by Argentine company Satellogic, blasted off atop a Long March-6 carrier rocket at 11:19 a.m. (Beijing Time). Each weighing about 41 kg and with a design life of three years, the 10 satellites will be used to provide commercial remote sensing services with their multispectral and hyperspectral loads. Also on board the rocket were three satellites developed by Chinese high-tech companies and research institutes for remote-sensing observation, science experiments, and science popularization. One of the three is a 6G test satellite, weighing 70 kg and named after one its developers, University of Electronic Science and Technology of China. The satellite, carrying a terahertz satellite communication load, will establish a transceiver link on the satellite platform and carry out terahertz load tests. The launch of the 6G test satellite marks a breakthrough in the exploration of terahertz space communication technologies in China's space field, said Xu Yangsheng, an academician of the Chinese Academy of Engineering. The satellite will be used in smart city construction, disaster prevention and mitigation, land planning, environmental protection, and the monitoring of major infrastructure construction.

ThrustMe and Spacety Launch World's First Satellite Iodine Electric Propulsion System for Satellite

November 6, 2020 - ThrustMe and Spacety announce that the BEIHANGKONGSHI-1 satellite, carrying the world's first iodine electric propulsion system on board, was successfully launched into space on a CZ-6 Long March 6 rocket from Taiyuan in China on the 6th of November. In-space propulsion is becoming a critical subsystem, particularly for satellite constellations, for which high-performance, turnkey, and streamlined solutions are important to ensure economic and environmental sustainability of the space

industry. The use of small satellites operating not individually, but as part of a constellation, has changed the way the industry designs, manufactures, launches and operates satellites. Propulsion systems available for these satellites have so far been too complex, too expensive, or had insufficient performance to provide full constellation deployment capabilities, and new innovative propulsion solutions are needed. The BEIHANGKONGSHI-1 satellite includes a ThrustMe NPT30-I2 electric propulsion system which uses iodine propellant. Iodine can be stored as a solid and does not require any complex or costly high-pressure storage tanks like conventional gaseous propellants such as xenon. This also means that the propulsion system can be delivered pre-filled, which greatly simplifies satellite integration and testing. Considering the high production cost of xenon, and the predicted supply problems to meet growing demands from satellite constellations, iodine is seen as an important next-generation propellant to enable sustainability of the space industry.

Rocket Lab to Attempt First Stage Recovery on Next Mission

November 5, 2020 - Rocket Lab has today revealed that it will attempt to recover the first stage of its Electron rocket during its next mission, the 'Return to Sender' launch, scheduled for lift-off in mid-November. The test will see Rocket Lab attempt to bring Electron's first stage back to Earth under a parachute system for a controlled water landing before collection by a recovery vessel. The mission will be the first time Rocket Lab has attempted to recover a stage after launch and is a major milestone in Rocket Lab's pursuit to make Electron a reusable rocket to support an increased launch cadence for small satellite missions. The 'Return to Sender' mission, which will be Rocket Lab's 16th Electron launch, will lift-off from Launch Complex 1 on New Zealand's Māhia Peninsula. The 14-day launch window is scheduled to open on November 16 UTC (November 15 PT / ET) with lift-off to take place between 01:44 – 04:34 UTC (17:44 – 20:34 PT / 20:44 – 23:34 ET). The mission will see Electron deploy 30 payloads for a range of small satellite customers to a 500km sun-synchronous orbit, with the recovery attempt a secondary objective of the launch.

Airbus Wins Contract for European Space Agency TRUTHS Earth Observation Mission

November 3, 2020 - Airbus has been awarded the lead in the European Space Agency (ESA) contract for the TRUTHS A/B1 (System feasibility Studies and Pre-Developments) as part of ESA's Earth Observation Earth Watch programme. The TRUTHS satellite mission will collect measurements of the Sun radiation and of the sunlight reflected off Earth's surface traced to an absolute metrological reference, which will then be used to improve the climatological data sets and calibrate the observations of other satellites. This space-based climate and calibration observing system will enable data from other satellites to be compared more easily providing greater standards of data harmonisation for even more accurate climate change forecasts. TRUTHS stands for Traceable Radiometry Underpinning Terrestrial and Helio Studies. The study will define the TRUTHS mission system implementation concept as well as focus on the preparation of critical technologies ahead of implementation of the mission in 2023. TRUTHS will carry a Cryogenic Solar Absolute Radiometer (CSAR) to provide a primary calibration standard in order to benchmark measurements of both incoming solar radiation and outgoing reflected radiation - measured with a Hyperspectral Imaging Sensor (HIS) also part of the payload - with unprecedented accuracy. These measurements will give the ability to estimate radiative imbalance underlying climate change and, importantly, in a shorter time than is currently possible. TRUTHS will serve to calibrate other satellite sensors, such as those carried on the Copernicus missions, through co-imaging operations.

ESA Signs First Boost! Commercial Space Transportation Contracts

November 3, 2020 - ESA has signed the first three contracts with European economic operators arising from its permanently open call for proposals for commercial space transportation services. Boost! – ESA's Commercial Space Transportation Services and support to Member States programme was adopted at Space19+ and an Open call for proposals under its Element 1 was launched in April this year. Through this programme, ESA aims to stimulate and support competitiveness and new commercial European space transportation services. ESA provides co-funding, expert advice and the use of testing facilities that help entrepreneurs to take their service projects towards commercialisation. Today, the first Boost! support contracts have been signed with three German New Space companies: HyImpulse Technologies, Isar Aerospace Technologies, and Rocket Factory Augsburg. All three companies are preparing to offer new launch services using small launch vehicles to serve the growing small satellite market.

Lacuna Space Puts Another IoT Gateway in Space

November 3, 2020 - Lacuna Space adds the latest satellite to its demonstration constellation for the Internet-of-Things (IoT). The company completed in-orbit tests today, after being launched on the 28th

September into low earth orbit, at about 500 km above Earth. The satellite payload and mission is essentially a modified IoT Gateway in space, built by Lacuna Space. The IoT Gateway allows to connect 'things', such as sensors, with the internet in remote areas where conventional connectivity is not commercially viable. According to Lacuna Space CEO, Rob Spurrett, this satellite will greatly boost the Lacuna network capacity and extend customer trials to additional market segments. Examples for applications include predictive maintenance and tracking of heavy machinery in remote areas. Automating the dispatch of replacement parts, scheduling resources where needed and minimising down time. Lacuna Space recognises that satellites can play an essential role in extending the connectivity of 'things' to remote areas where conventional connectivity is not commercially viable, and power is a scarce resource. Using specially adapted Low-Power Wide Area Network protocols (LPWAN), Lacuna sensors are smaller than the palm of a hand, and can connect over satellite for several years off a single battery charge. Lacuna Space started to lead the way when developing its concept during its period in the ESA Business Incubation Centre at Harwell in the UK, followed by developing low-cost satellites to demonstrate its capability and viability, with support from the European Space Agency and the UK Space Agency.

Rocket Lab to Launch Most Diverse Mission Yet

November 2, 2020 - Rocket Lab has announced its next Electron mission will feature a diverse range of payloads from the United States, France and New Zealand. The mission, which will be Rocket Lab's 16th Electron launch, will lift-off from Launch Complex 1 on New Zealand's Māhia Peninsula during a 14-day launch window that opens on November 16 NZT / November 15 UTC. Rocket Lab's Electron launch vehicle will loft 30 satellites to a sun-synchronous orbit at 500 km altitude for a range of customers, including TriSept, Unseenlabs, Swarm Technologies, Te Pūnaha Ātea - Auckland Space Institute, and Gabe Newell, co-founder of global gaming software company Valve. The satellites span a range of operations, from TriSept's tech demonstration of new tether systems designed to accelerate spacecraft reentry and reduce orbital debris, through to the next generation of maritime surveillance satellites for Unseenlabs, as well as communications satellites for Swarm Technologies. The mission will also deploy New Zealand's first student-built satellite, the APSS-1 satellite for Te Pūnaha Ātea - Auckland Space Institute at The University of Auckland.

The Colombian Air Force Initiates its Second Advanced Nanosatellite Mission with GomSpace

November 2, 2020 - GomSpace has signed a contract with CODALTEC / Colombian Air Force ("FAC") to initiate the FACSAT-2 satellite mission and associated intensive virtual technology transfer program. The contract is worth 6.9 MSEK (770KUSD) and will be delivered over the next 6-8 months. The FACSAT-2 project comprises design, manufacture, test and operation of an advanced 6U remote sensing spacecraft. The program will build on the successful collaboration established and local capability built during the FACSAT-1 program under which a Colombian 3U satellites was launched in 2018 and is today in continued operation by FAC. This is the second step to develop a small satellite capability in Colombia with the Colombian Air Force directly involved in all phases of implementing the program. The present contract covers preliminary design activities and continued capacity building to be performed with close collaboration between GomSpace experts and FAC personnel.

EXECUTIVE MOVES

Northrop Grumman Names Scott Stapp as CTO

November 25, 2020 - Northrop Grumman Corporation has named Scott Stapp chief technology officer (CTO). Stapp will report to Kathy Warden, chairman, chief executive officer and president and will work closely with the executive leadership team. Previously, Stapp was vice president, resiliency and rapid prototyping, with Space Systems, leading the sector's rapid prototyping and resiliency programs across critical space missions. Prior to this, he served as vice president, applied research and technology development, with Aeronautics Systems. Before joining Northrop Grumman in 2014, Stapp led the governance, acquisition and oversight of all DoD special access programs, for the Office of the Secretary of Defense, and served as the principal staff assistant to the undersecretary of defense, acquisition, technology and logistics.

Gilat Names Adi Sfadia as CEO

November 23, 2020 - Gilat Satellite Networks has named Adi Sfadia as Gilat's CEO. Adi Sfadia served as Gilat's interim CEO since July 2nd this year and prior to that held the position of Gilat's CFO, for the past 5 years. Dov Baharav, Gilat's Chairman of the Board commented, "I am pleased to report that Adi Sfadia, who assumed the interim CEO position on July 2nd, 2020, has now been appointed as Gilat's CEO. Adi brings

with him a deep understanding and a wealth of experience in the satellite industry, which I believe will bring value to the customers, shareholders and Gilat's employees. On behalf of the entire Board of Directors, we would like to wish Gilat success under Adi's capable leadership." "I am honored to have been appointed as Gilat's CEO and would like to thank Gilat's Chairman of the Board and all of the board members for their trust and support," said Adi Sfadia, Gilat's CEO. "I am fully committed to Gilat and am confident that with my dedicated management team and talented employees, we will navigate Gilat to accelerated growth and profitability."

Boaz Levy Appointed Chief Executive Officer of IAI

November 16, 2020 - Israel Aerospace Industries (IAI) Board of Directors, chaired by Harel Locker, approved the search committee's recommendation to nominate Mr. Boaz Levy as IAI's Chief Executive Officer (CEO). Levy succeeds Maj. General (ret.) Nimrod Sheffer, who stepped down as CEO on October 31, 2020. The nomination will be submitted to the Minister of Defense, Lt. General (ret) Benjamin Gantz, and the Minister for Cyber & National Digital Matters, Dudi Amsalem who supervising the Israel Government Companies Authority. Boaz Levy's career at IAI spans over 30 years. In 1990 he joined the company as an engineer for the Arrow Project and in 1999 became the project's chief engineer. From 2003 to 2006, Mr. Levy headed the induction of the Arrow-2 into operational service after going through numerous successful test flights. From 2006 to 2010 he headed the Barak-8 program, which evolved into one of the world's most advanced air defense systems and became one of IAI's most significant growth engines. In 2010, Boaz Levy was appointed as general manager of IAI's air defense division and in 2013 he became Vice President of the Systems Missiles and Space Group, leading the group to become IAI's most profitable and successful business unit.

Panasonic Avionics Names Hernan Abbes as Vice President, Global Sales

November 11, 2020 - Panasonic Avionics Corporation (Panasonic) has today announced the appointment of Hernan Abbes as Vice President, Global Sales. In his new role, Hernan will play a pivotal leadership role in driving business growth and nurturing strong relationships with new and existing airline customers. He will report directly to CEO, Ken Sain, and have worldwide responsibility for developing and implementing strategic sales initiatives across Panasonic Avionics' range of products, services and solutions. Hernan will oversee efforts to strengthen customer relationships, listen to and understand customer needs, propose innovative solutions and share the voice of the customer feedback within Panasonic. As a member of Panasonic's senior leadership team, he will also participate in strategy formulation and key decisions across the business.

Eutelsat Announces the Appointment of Pascal Homsy as Chief Technical Officer

November 10, 2020 - Eutelsat Communications announces the appointment of Pascal Homsy as Chief Technical Officer. Pascal joins Eutelsat from Thales Alenia Space where he was head of the Space Telecommunications Business Line. He brings with him some 30 years' experience of senior management positions within major international groups, notably the telecoms conglomerate, Alcatel/Lucent/Nokia and the IT Services leader, Atos. A seasoned Chief Technical Officer, Pascal has headed teams specialised in IP Platforms, Voice and Services, Fixed Networks, Broadband Wireless and Mobile Networks. In addition, he brings end-to-end knowledge of our value chain, having served in several Global Account Management and Sales Support roles at Alcatel, where he was notably in charge of the relationship with Orange. Pascal also has considerable international experience, having spent the early part of his career in charge of Alcatel's activities in numerous APAC markets, and subsequently holding responsibility for EMEA in various technology and commercial roles. Pascal will join Eutelsat in January and will sit on the Executive Committee. He replaces Yohann Leroy who has decided to continue his professional career outside the Group. I take this opportunity to warmly thank Yohann for his key contribution to Eutelsat's development and to wish him well in his future endeavors.

Virgin Galactic Appoints Alistair Burns as Chief Information Officer

November 10, 2020 - Virgin Galactic Holdings, Inc., a vertically integrated aerospace and space travel company, today announced the appointment of Alistair Burns as Chief Information Officer, effective immediately. In this newly created role, Alistair will be responsible for delivering the technology strategy for Virgin Galactic as it seeks to develop and operate the world's first commercial spaceline. Taking advantage of the latest innovations and technologies, Alistair will oversee the IT infrastructure that is critical in supporting the Company's operations and enabling it to achieve its unique objectives. He joins Virgin Galactic as it prepares for the next stage in its test flight program and progresses further towards running commercial service. Alistair has forged an impressive career in IT with over 25 years' experience.

He has worked at some of the largest companies globally and gained experience across several industries from manufacturing through to media. Most recently, Alistair spent almost 5 years as Senior Vice President and Chief Information Officer at OSI Systems, a designer and manufacturer of specialized electronic systems and components for critical applications. In this role, he worked across a range of industries including security, defense, aerospace and healthcare.

Viasat Announces Leadership Evolution

November 5, 2020 - Viasat announced that its Chairman and Chief Executive Officer Mark Dankberg has become Executive Chairman of the Company, a new position. He is continuing in his role as Chairman of the Board of Directors of Viasat. The Company's President and Chief Operating Officer, Rick Baldrige, has been named President and Chief Executive Officer. These executive changes went into effect on November 3, 2020. This evolution formalizes the way Dankberg and Baldrige have been operating for the past several years. As Executive Chairman, Dankberg will continue to focus on advancing the strategic technology and business direction of the Company, as well as continue to influence the national and global space and broadband regulatory environments that are critical to Viasat's global strategy. As President and CEO, Baldrige will continue his executive and operational leadership, with a focus on building and growing a customer-centric organization that will continue to deliver compelling global services and products. Baldrige will maintain his seat on the Viasat Board of Directors. This leadership evolution is an initial step in the Company's long-term succession plan, creating a foundation for the development of future generations of executive leadership. This seamless transition comes at an important time in Viasat's growth where the demands for innovation, leadership and operational execution are paramount in scaling the Company as it prepares for the impending launch of the ViaSat-3 global constellation. The new constellation will expand Viasat's reach and capabilities into new geographies and emerging vertical markets, further broadening the Company's broadband and technology leadership positions.

Space Industry Veteran Tom Campbell Named as President of Made In Space

November 4, 2020 - Redwire announced today the hiring of Thomas (Tom) B. Campbell as the new president of its subsidiary, Made In Space, effective October 26. As a proven business leader and industry expert on space antennas and structures, Mr. Campbell will oversee Made In Space's product and technology portfolio within Redwire's broader innovation ecosystem, reporting to Redwire Chairman and CEO Peter Cannito. Campbell succeeds former Made In Space President Andrew Rush, who will fully assume his responsibilities as Redwire Chief Operating Officer. Campbell joins Redwire from L3Harris, a global aerospace and defense technology innovator with approximately \$18 billion in annual revenue. For the past three years, Campbell served as general manager of Space Antennas and Structures. In that role, he matured L3Harris' space antennas business among civil, defense, and commercial space customer segments.

AsiaSat Appoints Tony Chung as Vice President, Data Services

November 4, 2020 - Asia Satellite Telecommunications Company Limited (AsiaSat), Asia's premier satellite solutions provider, announced the appointment of Tony Chung as Vice President, Data Services. In this new role, Tony will be responsible for overseeing the company's data services operations and infrastructure. Tony brings over 17 years of experience in the satellite communications service industry, with demonstrated success in managing and leading technical teams to deploy networks and to increase operational efficiency. Prior to joining AsiaSat, Tony served as Senior Vice President, Asia Pacific Operations of Speedcast International Limited where he was tasked with running the company's operations, including field engineering and service delivery for customers in the region. He had contributed to a series of successful acquisitions by Speedcast. Tony obtained his B.A. and M.Phil. degrees in Computer Science from The Hong Kong Polytechnic University.

Gilat Hires Eyal Zelinger as Global Defense Vice President and General Manager

November 3, 2020 - Gilat Satellite Networks has hired BG (Res.) Eyal Zelinger as its Global Defense Vice President and General Manager. The retired Brigadier General from the Israel Defense Forces (IDF) will head Gilat's Defense business to maximize opportunities worldwide. Appointment effective December 1st, 2020. BG (Res.) Eyal Zelinger brings a wealth of experience of over thirty years in the IDF C4I branch. During his service he managed the development and operation of the IT systems, cyber defense, communication infrastructure, and served IDF's highest strategic leadership. He retired at the rank of a Brigadier General after serving as the Chief Signal Officer & C4I/J6 Chief of Staff, a position he held until August 2015.

BridgeComm Hires New Technical Program Director

November 2, 2020 - BridgeComm announced that Jean-Pierre “JP” Devieux has joined the company as technical program director. A proven wireless systems engineer and management professional in the innovative communications industry, Devieux will oversee the development and execution of BridgeComm’s OWC solutions, including its managed optical communications array (MOCA) technology and deployment of high-speed networks.

REPORTS

Euroconsult Report: FSS Capacity Pricing Trends

November 30, 2020 - In its latest research titled, “*FSS Capacity Pricing Trends*,” Euroconsult, reported that the dramatic pricing declines of the past five years have slowed as a result of notable slowdowns in new capacity supply additions. However, intense pricing pressure is expected to return in advance of new capacity coming online in the 2022-23 timeframe. Over the past five years, average capacity pricing levels in video markets have dropped 30 percent in aggregate, while data markets have experienced 60 percent declines. While pricing is beginning to stabilize, the previously strong mobility market is now seeing pricing erosion in the short term, due to the COVID-19 pandemic and its impact on global travel.

NSR Report: Satellite Data to Generate Downstream Value of \$20.7 Billion in Next Decade

November 24, 2020 - NSR’s *Big Data Analytics via Satellite, 4th Edition report*, published today, finds continued growth for downstream Big Data applications through the next decade. NSR sees this growth driven by applications built on Earth Observation and M2M/IoT satcom data across multiple market verticals. Despite market downturns in specific verticals and the COVID-19 pandemic, Big Data analytics via satellite will generate close to \$20.7 billion in cumulative revenues by 2029.

FSS Market Continues to Dip in 2020; Strong Impact of Covid-19 on Mobility Business of Operators

November 18, 2020 - In its annual publication focused on the current and historic performance of Fixed Satellite Services (FSS) companies, Euroconsult reported increased competition and strong impact from COVID-19 in this \$10.8 billion market (excluding vertically-integrated operators). Operators are adapting to remain relevant in the long term and to weather the storm in 2020-2021, with the ongoing pandemic impacting the global industry. More than half a year after the start of the Covid-19 crisis, there are clear indications that the FSS industry has been negatively impacted. Most publicly listed operators reporting on a quarterly basis have reported lower revenues for 3Q 2020 vs. 3Q 2019. After the first three quarters of the year, these companies have reported revenues down an average 4% year-over-year.

NSR Report: Gov/Mil SatCom Market on Track to Generate \$93B by 2029 despite COVID-19

November 11, 2020 - NSR’s newly released *Government and Military Satellite Communications, 17th Edition report* finds despite the challenges of COVID-19 that Gov & Mil markets posted an overall revenue growth for 2019 /2020 reaching \$93 Billion by 2029. With nearly \$6.4 Billion in 2019 connecting all ranges of Gov & Mil operations – from frontline response missions to complex military operations - commercial satellite connectivity continues to be a core pillar of this market. Reconciling current COVID-19 relief spending with future connectivity investments for Government & Military markets will be the key challenge in the mid-term. Yet, at over 900 Gbps of bandwidth demand by 2029, up from 41 Gbps in 2019, the market will continue to demand more robust, reliable, and resilient connectivity from commercial markets. Migration from FSS Ku-band to the latest MEO or LEO Non-GEO HTS connectivity combine with Satellite Handhelds, Narrowband IoT and other form factors will drive the market to over \$11 Billion in Retail Revenues by 2029.

WTA Releases “Inside the Top Operators,” Provides Insight into Market Trends for Teleport Operators

November 4, 2020 - The World Teleport Association (WTA) released *Inside the Top Operators*, an annual report on growth, pricing changes, the state of competition and how leading teleport operators are responding to the trends. The teleport industry is not large by global standards, but it plays an outside role in connecting the networks and applications in the sky with terrestrial suppliers and users of services. Since 2004, WTA has published its Top Teleport Operator rankings based on an annual survey of operators as well as review of financial data from publicly-traded firms.

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

News, comments, and suggestions can be sent to the editor at:

Inho Seo, Editor, APSCC Publications

Asia-Pacific Satellite Communications Council (APSCC)

T-1602, 170, Seohyeon-ro, Bundang-gu, Seongnam-si,

Gyeonggi-do, SEOUL 13590, Rep. of KOREA

Tel: +82 31 783 6247

Fax: +82 31 783 6249

E-mail: editor@apsc.or.kr Website: www.apsc.or.kr

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.