

APSCC Monthly e-Newsletter

FEBRUARY 2020

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

SATELLITE BUSINESS

Speedcast Government Provides Connectivity Services to UN Agency

January 30, 2020 - Speedcast Government is supporting a UN Agency and an independent national electoral committee in Niger, Africa in their mission to ensure that no electoral fraud takes place. In preparation of the upcoming national elections, Speedcast Government has been asked to provide satellite internet services, equipment, life-cycle operation, installation, maintenance and logistics support for eight regional electoral sites. The project is divided in two phases and expected to be completed before legislative and presidential elections take place in 2020-2021.

GMV to Install Control System for Space Norway's Two Arctic-deployed Satellites

January 30, 2020 - GMV, a supplier of commercial telecommunication satellite monitoring systems, has signed a contract with Northrop Grumman for development and supply of the Satellite Operations Center for Space Norway HEOSAT's ASBM-1 and ASBM-2 satellites. Space Norway HEOSAT, a subsidiary of the government owned Space Norway, is a Norwegian company set up to run the Arctic Satellite Broadband Mission (ASBM). ASBM-1 and ASBM-2, built by Northrop Grumman on the GeoStar3 platform, make up the core of ASBM, a satellite system designed to work in highly elliptical orbits (HEO) to ensure broadband connectivity at latitudes beyond the reach of geostationary satellites.

Comtech Telecommunications to Acquire Gilat Satellite Networks

January 29, 2020 - Comtech Telecommunications and Gilat Satellite Networks jointly announced that Comtech has agreed to acquire Gilat in a cash and stock transaction for \$10.25 per Gilat ordinary share of which 70% will be paid in cash and 30% in Comtech common stock, resulting in an enterprise value of approximately \$532.5 million. Founded in 1987 with its headquarters in Israel, Gilat is a worldwide leader in satellite networking technology, solutions and services with market leading positions in the satellite ground station and in-flight connectivity solutions markets and deep expertise in operating large network infrastructures. Based on Comtech's fiscal year 2019 actual results and Gilat's trailing twelve-month results through June 30, 2019, on a pro-forma basis, Comtech would have reported approximately \$926.1 million of revenue with Adjusted EBITDA of approximately \$130.2 million. The combined companies would employ approximately 3,000 people and offer best-in-class satellite technology, public safety and location technology and secure wireless solutions to commercial and government customers around the world.

ETL Systems Receives Major Investment from CBPE Capital

January 29, 2020 - ETL Systems, a global designer and manufacturer of leading RF distribution equipment used in the ground segment of the satellite communications market, has received significant investment from CBPE Capital, to support its management's ambitious growth plans. The business is embarking on further expansion, designed to take advantage of positive market drivers in the satellite industry and solid industry conditions. ETL serves various end markets including broadcasting, energy, defence, government and maritime and has a distinguished track record of growth and technological innovation in support of its international client base. The company is the recipient of multiple industry accolades including three Queens Awards in recent years.

C-Com and Isotropic Come Together to Complete iDirect iQ 200 Integration

January 29, 2020 - C-COM Satellite Systems Inc. and reseller partner, Isotropic, have collaborated on the integration of the iDirect iQ 200 modem with C-COM's iNetVu® antenna controllers. The new modem is now fully compatible on all C-COM antenna systems using OpenAMIP interface. C-COM utilized Isotropic's extensive teleport facilities on Lake Geneva to test auto-pointing satellite acquisitions and data transfers.

The compatibility of the iNetVu® Controllers with the iQ 200 satellite router provides an advantage to C-COM partners who are currently using or considering to use the latest iDirect modem. C-COM's 'Best-in-Class' antenna controllers now offer interoperability with 14 different modem manufacturers and over 35 different modems. The iDirect iQ 200 modem can deliver aggregate data transmission rates over 200Mbps with network configurations based on DVB-S2/S2X/ACM.

Inmarsat and ITC Global to Expand Connectivity for Energy, Maritime and Yachting Customers

January 29, 2020 - Inmarsat and ITC Global have announced a five-year strategic collaboration. The partnership enables the organizations to combine their highly complementary, market-leading services to offer broadband connectivity, paired with high-value connectivity solutions to customers in the maritime, yachting and offshore energy sectors. ITC Global will offer Inmarsat's market-leading Fleet Xpress service, incorporating the Ka-band solution into its existing comprehensive range of Ku-band connectivity services. Fleet Xpress for Offshore is powered by the Global Xpress Ka-band network, combined with the proven reliability of Inmarsat's flagship, FleetBroadband L-band service. Delivering high data speeds, continuous connectivity and guaranteed performance, the Ka-band service - which is now installed on over 8,000 vessels - sets a new standard for maritime global communications, with crew welfare, regulatory and operational drivers at the heart. Benefits include affordable voice calls, multiple voice options for crew and operations and high-speed broadband for internet access, plus 24/7 online support by certified engineers. For offshore clients, Fleet Xpress provides added subscription flexibility to meet seasonal and short-term demand changes.

Solstad Offshore Renews and Expands Fleet Contract with Marlink

January 29, 2020 - Solstad Offshore, a leading provider of specialized offshore tonnage to the international oil and gas industry, has renewed its connectivity contract with Marlink, committing 65 offshore vessels to Sealink, Marlink's high-throughput Ku-band VSAT service. Solstad's vessels will be provided with Sealink Services and L-band backup to ensure seamless global connectivity. To meet the diverse demands of its OSV fleet, Solstad sought a highly flexible, customized and future-proof service. Building on more than 10 years' partnership, Marlink cooperates closely with Solstad Offshore to meet their operational and ICT requirements. A tailor-made setup consisting of five diverse packages will allow Solstad to choose the hardware fitted to each vessel, ranging from basic 4G connectivity to a fully managed, high-throughput single or dual antenna VSAT system.

Speedcast Wins Cellular Backhaul Contract with Leading Mexican Mobile Operator

January 28, 2020 - Speedcast has been awarded a 12-month contract with the second largest mobile operator in Mexico. Speedcast's fully managed, end-to-end cellular backhaul solution will help the mobile operator expand its network and provide connectivity to sites where other type of communication is unavailable. Using Speedcast's cellular backhaul service, the operator will have access to an extensive network of networks that includes terrestrial MPLS, LTE, 5G and the largest portfolio of satellite capacity in the world. Offering a flexible pay-as-you-grow business model, Speedcast's backhaul service will help the operator cost-effectively expand its mobile coverage into new markets and grow its revenue. Speedcast's 24/7 design, installation, and engineering support will ensure a smooth deployment.

Iridium CloudConnect Goes Live, Extending IoT on Amazon Web Services Globally

January 28, 2020 - Iridium CloudConnect is now actively serving customers. This new service combines Iridium® IoT capabilities with Amazon Web Services (AWS) IoT and cloud services extending customers' IoT reach to the more than 80 percent of the Earth that lacks terrestrial coverage. By combining the unique attributes of the Iridium network with the breadth of AWS supporting infrastructure and services, Iridium customers can reduce engineering time, lower fixed operating costs, and experience faster development and deployment of new IoT products and applications. For existing AWS customers, Iridium CloudConnect is providing the ability to easily expand their current service footprint beyond terrestrial coverage, creating the opportunity for additional service offerings and improved performance through the addition of satellite connectivity. The service makes it easier to do business by translating between industry-standard cloud protocols and Iridium's Short Burst Data® service. This allows virtually any IoT device connected through the Iridium network to speak natively with AWS IoT services as well as other value-added elements available in AWS Marketplace. Iridium's IoT services continue to experience strong subscriber growth. Commercial IoT data subscribers grew 25% from the third quarter of 2018 through the third quarter of 2019, to 767,000 customers.

SES GS, Artel and Leidos Provide Mission-Critical Connectivity for Palmer Station, Antarctica

January 23, 2020 - SES Government Solutions (SES GS) and Artel have teamed with Leidos to deliver vital connectivity solutions to Palmer Station, Antarctica, operated by the National Science Foundation (NSF). The satellite-based service will serve as the primary backbone for the sharing of leading year-round scientific research from the field to the United States Antarctic Program (USAP) data center located over 7,500 miles away in Centennial, Co. Artel engineered the solution leveraging the C-band coverage provided by the SES-14 satellite, with backhaul from the SES Government Solutions Teleport in Bristow, Va. through terrestrial circuits also engineered by Artel. The rapid data connection ensures the reliable transfer of data for the scientific community, but also provides a glimpse into the far reaches of Antarctica for the public through their station and penguin webcam live streams.

Intellian's NX-series Systems Receive IntelsatOne Flex Certification

January 23, 2020 - Intellian announced the successful certification by Intelsat of the Intellian NX series products, with both the v85NX and v100NX endorsed for use with the IntelsatOne Flex service. IntelsatOne Flex is a customizable service with a guaranteed Service Level Agreement (SLA), offering tiered, flexible plans which prioritize bandwidth across different satellite beams to meet demand. This avoids any requirement for customers to buy dedicated bandwidth scaled for peak usage or specific regions, thus keeping costs down. Flex easily adapts to serve new geographic or fleet additions, while still providing a predictable cost structure that is directly matched to revenue-generating activities. Flex is facilitated through a simplified, unified global network environment formed by aggregating Intelsat's new EpicNG high-throughput satellites (HTS), existing Ku-band fleet and IntelsatOne terrestrial fiber networks, managed through an HTS-optimized iDirect Velocity platform to provide seamless connectivity to the customer.

Comtech Introduces the CS67PLUS, the World's First and Smallest Software-defined, High Capacity, Troposcatter Radio/Modem

January 23, 2020 - Comtech Telecommunications Corp. has announced that its Orlando, Florida-based subsidiary, Comtech Systems, Inc., which is part of Comtech's Government Solutions segment, introduced the world's first software-defined adaptive troposcatter combination radio/modem, packaged in a compact sealed module. This unique, patented adaptive architecture is capable of supporting line-of-sight (LOS) and troposcatter beyond-line-of-sight (BLOS) communications with a capacity of up to 210 Mbps of full duplex data throughput. Offering a wide selection of modulation techniques from BPSK to 64APSK, coupled with the most powerful Error Correction in the industry, Low Density Parity Check (LDPC), the CS67PLUS Tropo Radio is a solid foundation for any troposcatter system. Operating in the 70 MHz to 6.0 GHz frequency range, the compact size of the CS67PLUS is possible due to its Zero-IF design, providing the lowest cost, lowest power, and the smallest footprint solution of any modern troposcatter radio/modem technology to date. The radio module is mounted in a single rack unit connectorized interface chassis. It contains two transmit channels and four receive channels and is user-configurable for Single, Dual or Quad Diversity system configurations, essential to modular tactical troposcatter terminals.

Globalsat Group, Inmarsat and Cobham Sign Contract to Provide Rumo with Satcoms across Brazilian Railway Network

January 23, 2020 - Globalsat Group, through its Brazilian affiliate Globalsat do Brasil, has signed a multi-year contract with Rumo SA, the largest transport and logistics company in Latin America. In a deal that is set to significantly improve the running of Rumo's Brazilian rail infrastructure, Globalsat Group will provide a solution leveraging satellite connectivity from Inmarsat and Cobham connectivity terminals. This solution will connect Rumo's cargo trains, increasing the speed with which goods can be transported across the country and improving the safety of trains, vehicles and the people operating them. The first stage of the project will begin in early 2020 and will see Globalsat Group equipping 300 of Rumo's cargo trains, operating on this section of track, with Cobham EXPLORER 325 Broadband Global Area Network (BGAN) terminals, EXPLORER Mobile Gateways and the PRISM PTT+ service, delivering uninterrupted connectivity, even in the most isolated of areas without mobile coverage. This will enable accurate real-time tracking of each train as well as reliable voice and data communication between drivers, maintenance crews and regional control centres. The framework's intent is to see 1,600 locomotives provisioned with highly reliable BGAN connectivity, ensuring an efficient, profitable and safe railway network.

ST Engineering iDirect Enables Speedcast to Respond to Growing Bandwidth Demand

January 22, 2020 - ST Engineering iDirect, a company of ST Engineering North America, announced that Speedcast will deploy the Newtec Dialog® platform to provide worldwide satellite broadband services for

its customers. The deployment will enable Speedcast to respond to the exponential demand for high-speed connectivity on board cruise ships and may also be used for other vertical market segments with increasing bandwidth requirements, such as yachting, oil and gas and the enterprise market. This builds upon the long-term partnership that has been forged between ST Engineering iDirect and Speedcast, supporting mission-critical communications in the world's most remote regions. The cruise market remains the biggest user of maritime satellite communications and is driving the sector with its increasing demand for connectivity. Cruise ships are essentially floating cities, and passengers and crew wish to experience the same connectivity at sea as at home. This supports the multiple devices that they have to keep in touch on social media and for their online entertainment needs. More essentially, connectivity brings about a plethora of operational benefits for operators, enabling them to manage their fleets and crew more effectively.

Kymeta and Isotropic Networks Collaborate on Next Generation Flatpanel Antenna Services

January 22, 2020 - Isotropic and Kymeta have partnered to conduct over-the-air testing on Kymeta's u7 antenna and next generation antennas. Testing took place last week in the Seattle area on Isotropic's E115 network. Previous testing took place on the AM2 and G28 satellites on the east coast. The Kymeta u7 antenna was paired with an iDirect X7 satellite router and iQ 200LTE modem, which are optimized for mobility. These successful tests demonstrate the ability of the antenna to operate across multiple satellite networks and beams, and they mark the first time Isotropic's commercial service offering has been delivered immediately following conception. The Kymeta u7 Ku-band satellite terminal addresses the need for lightweight, low-profile, and high throughput communication systems on-the-move. The u7 terminal makes connecting to nearly any vehicle, vessel, or fixed platform easier and more reliable than ever before.

Compact VSAT C4 is qualified to be INTELSATOne Flex Terminal

January 22, 2020 - On 16 January 2020, the compact maritime VSAT C4 terminal system – which is developed by world leading maritime VSAT manufacturer in South Korea, KNS – is qualified by INTELSATOne Flex network service. Through this approval, the C4 Terminal system can enjoy HTS (High Throughput Satellite) network service by INTELSATOne Flex in worldwide and the Company Terminal of KNS will contribute to have and enhance crew's welfare and communication capability from ship to ground station and vice versa.

Teekay Offshore Selects Marlink for Managed IT Services

January 22, 2020 - Teekay Offshore has selected Marlink's ITLink solutions portfolio with its benchmark IT operational platform, KeepUp@Sea, to streamline and improve fleet IT management. The deployment of ITLink positions Marlink as a single supplier of diverse Information Communication Technology (ICT) services for Teekay Offshore vessels, following a satellite services contract renewal in May 2019. Marlink will provision ITLink solutions across Teekay Offshore's fleet of shuttle tankers, ALP towing vessels and floating production storage and offloading (FPSO) units to ensure more availability of operational tools, resulting in more efficient and sustainable fleet operations. Representing a major endorsement of Marlink's ability to facilitate end-to-end digitalisation strategies for maritime businesses, this latest contract with Teekay Offshore also highlights the operational and financial advantages of using a single supplier to integrate failsafe global connectivity with a secure, managed IT infrastructure.

Globalstar Satellite IoT Collars Deployed to Track Livestock and Racehorses across Central Asia

January 22, 2020 - Globalstar Europe Satellite Services Ltd., a wholly owned subsidiary of Globalstar, Inc. has announced that collars based on SmartOne C and SPOT Trace are being deployed in Mongolia and elsewhere in Central Asia to track horses, including high-value competitive racehorses. Over 30,000 horses are currently being safeguarded by 1,000 satellite-enabled IoT collars in Mongolia with deployments expanding widely into Kazakhstan, Kyrgyzstan and Tajikistan while trials are underway in neighbouring territories. Demand for the latest collar from Mongolia-based Globalstar Value Added Reseller Spotter, built around the small SmartOne C tracker, has been unprecedented, with the number of total deployed Spotter units doubling in the six months since the product's July 2019 launch.

Comtech EF Data Receives Order for Satellite Modems to Support U.S. Army Project Manager (PM) Tactical Network

January 21, 2020 - Comtech EF Data has received a \$2.9 million order for satellite modems from a major U.S. Department of Defense (DoD) contractor. The order specified the DMD2050E MIL-STD-188-165A/STANAG 4486 Edition 3 Compliant Universal Satellite Modem, which will be utilized to support the U.S. Army Project Manager (PM) Tactical Network. The DMD2050E Satellite Modem is designed to comply

with the widest possible range of U.S. Government and commercial standards and is compatible with the largest number of satellite modems in the industry. It is fully compliant with MIL-STD-188-165A (all terminal types), fully complies with STANAG 4486 Edition 3, as well as the IESS-308, IESS-309, IESS-310 and IESS-315 commercial standards.

SITAONAIR Acquires GTD Air Services

January 20, 2020 - SITAONAIR announced the acquisition of GTD Air Services – the aviation branch of Spanish software provider GTD System & Software Engineering – in an exciting expansion of its application ambition and vision. Having successfully partnered with GTD Air Services to develop the eWAS portfolio – the market-leading electronic weather situational awareness mobile applications currently in use by 50,000 pilots worldwide – GTD Air Services will join SITAONAIR under the next phase of its application portfolio strategy. The acquisition will enrich SITAONAIR’s existing Digital Day of Operations application portfolio, and reflect its belief that embracing a digital shift will help reinvent the operation of aircraft, flights and the passenger experience, making flying safer, more efficient, enjoyable and sustainable.

HawkEye 360 and Airbus Form Strategic Partnership

January 20, 2020 - HawkEye 360, the first commercial company to use formation flying satellites to create a new class of radio frequency (RF) data and analytics, announced that it has formed a strategic partnership with Airbus. Through the partnership, Airbus and HawkEye 360 will deliver high-impact geospatial intelligence solutions not currently available. Both companies can leverage the platforms and services of the other partner to address client mission needs. This partnership enables HawkEye 360 and Airbus to fuse complementary data sets to maximize value to customers. Airbus will distribute HawkEye 360’s RF data and analytics across Europe to augment its maritime, defense, and intelligence products. HawkEye 360 will offer Airbus’ earth observation optical and synthetic aperture radar (SAR) products jointly with its RF solutions to serve defense and intelligence customers.

Thaicom Migrates Thaicom 5 Satellite Customers

January 17, 2020 - Thaicom Public Company Limited would like to update progress on the incident regarding a technical anomaly on the Thaicom 5 satellite resulting in technical limitations to monitoring the status of the satellite, as reported earlier by the company. Thaicom together with the satellite’s manufacturer and a team of specialists have performed three attempts to recover the satellite system since the anomaly occurred. However, the system has not successfully been restored. Thaicom continues to work with the satellite’s manufacturer to recover the satellite system by using various alternatives for a certain period of time. In order to ensure the continuity of services for customers, it is necessary for Thaicom to migrate the customers from Thaicom 5 to other satellites. Thaicom would like to emphasize that all key customers and television broadcast networks on Thaicom 8 and Thaicom 6, i.e., True Visions, Distance Learning Television (DLTV) and Must Carry Channels of Digital Terrestrial Television (DTT), have not been impacted by this incident.

Comtech Upgrades Indian Motorcycle's Ride Command System with Customizable Navigation

January 17, 2020 - Comtech Telecommunications Corp. announced its Location Technologies group has teamed up with Indian Motorcycle to build a motorcycle-specific navigation platform for its Ride Command system. Customized specifically to enhance the Indian Motorcycle experience, the built-in navigation platform provides riders with continuous connectivity. In addition to turn-by-turn directions, riders gain real-time access to special routing options for locating the shortest, fastest and most scenic routes. This includes waypoint routing that enhances the rider’s overall navigation experience by adding up to 100 stops, or special points-of-interest, to create one seamless route, as well as real-time traffic and weather overlays, so riders can plan their ride to avoid traffic and poor weather conditions. Doppler weather radar information is a patented design and unique to only Comtech's navigation platform. These unique navigation features are coupled with the ability to have maps available onboard and offboard, as riders ride through areas where cellular connectivity is limited.

Gogo and Hispasat Sign Capacity Deal to Meet Rising Inflight Connectivity Demand

January 16, 2020 - Gogo and Spanish satellite operator, Hispasat, announced a capacity agreement on Amazonas Nexus satellite to meet the growing global demand for high-speed inflight connectivity services. Gogo has leased multi-gigahertz of Ku-band capacity onboard Hispasat’s new satellite, set to launch in the second half of 2022, to provide service to its customers in the Americas and the Atlantic region. Hispasat and Gogo worked closely to optimize the satellite design to provide superior performance and capacity for

inflight connectivity. Amazonas Nexus is a High Throughput Satellite (HTS) with an innovative architecture that will replace the Amazonas 2 in the 61^o West position. The new satellite will have a payload specifically dedicated to aero connectivity and will offer additional capacities oriented to vertical segments like mobile connectivity, corporate communications and cellular network deployment. It will feature an advanced Digital Transparent Processor (DTP), a technological breakthrough that will substantially increase satellite flexibility when dealing with changes in demand.

AssetLink Global Ensures Real-Time Visibility and Safety of Vessels in South East Asia Waters

January 16, 2020 - AssetLink Global LLC announced that it is deepening ties with Kemilinks, a Singapore based telecommunications Service Based Operator (SBO) licensed by the Info-communications Development Authority of Singapore (IDA), by supplying marine grade distributed computing IoT hardware and ubiquitous connectivity services in support of regional commercial shipping and fishing markets. Kemilinks has authorized a large order of AssetLink's AssetPack™ family of IoT solutions for use in its Vessel Monitoring Systems (VMS), for tracking, emergency alerts, situational awareness in relation to critical maritime borders, and other fishery-related data and sensor communications. AssetLink IoT solutions are purpose built offering real-time track & trace and edge intelligence required by Kemilinks to precisely monitor location and activities of fishing vessels operating in territorial waters across South East Asia.

OneWeb Makes Strong Progress towards Arctic Connectivity, Teaming up with Pacific Dataport

January 15, 2020 - OneWeb announced a new distributor partnership with Pacific Dataport Inc. (PDI), a company founded by Microcom – the leading supplier of satellite communication systems in Alaska. The collaboration will enable delivery of OneWeb's high speed, low latency, communications services across Alaska. This agreement marks a key milestone in service-readiness for OneWeb's Network and its commitment to bring high-speed internet to the Arctic region. PDI's distribution agreement with OneWeb ensures that customers in the Arctic will enjoy OneWeb services as early as Q4 2020. Alaska's unique qualities mean that it is a center for economic growth, and OneWeb's seamless global network will be a key enabler of regional initiatives such as the collection of climate data, and the growth of a digital economy. PDI was founded to bring connectivity to all of Alaska and it has a strong commitment to local community projects such as Alaska Seeds of Change, Alaska Healing Hearts, and several other local initiatives. OneWeb shares with PDI this ethos of local collaboration; Alaska is the home of one of the six remote schools chosen to enjoy free OneWeb connectivity.

Boeing HorizonX and BridgeComm Pioneer Ultra-fast Optical Mesh for Terrestrial, Airborne and Space Applications

January 15, 2020 - BridgeComm, a leader in optical wireless communications solutions and services, announced the next stage in its relationship with Boeing HorizonX. The two companies are collaboratively pioneering the development of applications of One-to-Many (OTM) technology, a breakthrough in OWC that provides bi-directional, ultra-high-speed mesh connectivity for terrestrial, airborne and space systems. OTM builds on the basic connectivity that traditional point-to-point optical terminals provide and enables a much broader set of telecommunication applications. This technology enables optical wireless communications systems to create bi-directional mesh connectivity similar to, and complementary with, radio frequency systems. OTM is capable of supporting terrestrial, airborne and space systems that require 10-100+ Gbps throughput, as well as the high reliability and redundancy inherent in mesh architecture. OTM maintains the inherent security features in OWC, while supporting the mesh architecture. OTM also provides a much-needed new option for high-speed connectivity in environments where RF spectrum is limited or congested.

Comtech EF Data Receives \$4.0 Million Delivery Order for Satellite Earth Station Equipment

January 14, 2020 - Comtech EF Data Corp has received a delivery order in support of the awarded contract from the U.S. Naval Information Warfare Systems Command. This latest delivery order, against the \$59.0 million indefinite delivery/indefinite quantity ("IDIQ") contract, is for \$4.0 million. The delivery order specified Comtech EF Data's SLM-5650B Satellite Modems and firmware upgrades. The SLM-5650B Satellite Modem is Comtech EF Data's latest generation modem product targeted for critical commercial backhaul, government and military applications. The SLM-5650B leverages the heritage and feature set of the SLM-5650A modem. The SLM-5650B supports backwards compatibility/inter-operability for existing SLM-5650A networks while providing enhanced performance and an expanded feature set. The commercially available modems will support satellite communications and interoperability across the Navy's platforms and shore sites.

Orbit Develops New Multi-role 12-inch Ka-Band Airborne Terminal for Inmarsat

January 14, 2020 - Orbit Communication Systems Ltd. and Inmarsat announced the development of an innovative new Ka-band multi-purpose airborne terminal. The compact Multi-Purpose Terminal (MPT) 30WGX, featuring a 30-cm (12") antenna, will be able to deliver high-throughput wideband communications via the Inmarsat Global Xpress worldwide network for a broad range of airborne platforms. Built to fulfill "anytime, anywhere" connectivity requirements, the lightweight, small-footprint terminal combines high performance with Orbit's industry-leading reliability to address new opportunities in military aircraft and Unmanned Aerial Vehicles (UAVs). Following certification, volume production of the terminal is planned for Orbit's US-based facilities. Orbit's MPT 30WGX terminal complements its 46-cm (18") MPT 46WGX terminal, which will shortly enter full-scale production. Once certified, it will be similarly optimized for use with Inmarsat's Global Xpress system and will be interoperable with military Ka-band services, affording unique capabilities and flexibility.

Telesat Teams with Ball Aerospace and General Dynamics Mission Systems

January 14, 2020 - Ball Aerospace and General Dynamics Mission Systems have agreed to collaborate with Telesat in separate demonstrations that will highlight how high-performing commercial satellite systems, such as Telesat LEO, can provide important advantages for the U.S. Air Force's Space and Missile Systems Center's Commercially Augmented Space Inter Networked Operations (CASINO) program. CASINO is focused on operationalizing Blackjack, a project of DARPA. Blackjack is demonstrating how the military can increase the resilience of its networks by using commercially-derived LEO satellite constellations to disaggregate space-based comms that support DoD missions. The CASINO program office approached the Defense Innovation Unit (DIU) for help to solve the challenges with processing government data that originates on a commercial space bus. DIU facilitated pairing this commercial-defense relationship to solve the problem of data processing and exploitation.

ST Engineering Partners SUTD to Advance Continuous Learning in Design Thinking

January 13, 2020 - As part of its ongoing efforts to advance continuous learning, ST Engineering signed a memorandum of understanding with the Singapore University of Technology and Design (SUTD) for the co-development of courses and programs to build workforce competencies in human-centric design and innovation. The fully-sponsored courses and programs will equip employees with design thinking skills that will help them approach problem-solving through a user's lens, enabling new perspectives and creativity in developing effective solutions that better address customers' needs. The MOU is expected to benefit up to 1,000 ST Engineering employees. This MOU builds on ST Engineering's past collaborations with SUTD which has seen some 400 employees benefit from its design innovation programs over the last two years.

Iridium is Now Formally Authorized to Provide GMDSS Service

January 13, 2020 - Iridium Communications Inc. announced that on December 19, 2019 a Letter of Compliance was signed by the International Mobile Satellite Organization (IMSO), stating it has positively verified the operational and technical requirements as requested by the Maritime Safety Committee (MSC) of the International Maritime Organization (IMO) for Iridium to provide Global Maritime Distress and Safety System (GMDSS) service. The issuance of the letter formally authorizes Iridium to now provide satellite GMDSS service, bringing truly global coverage and a choice of both network and equipment to this critical emergency service for the first time. GMDSS is a safety of life system that helps rescue mariners in emergency situations while at sea. IMSO serves as regulator for the system, which is partially comprised of satellite networks that transmit distress information to rescue coordination centers around the world, in addition to the dissemination of navigational and meteorological data to vessels at sea.

exactEarth and Hisdesat Announce Multi-Year Contract with European Maritime Safety Agency

January 13, 2020 - exactEarth Ltd. and Hisdesat announce that in partnership they have been selected by the European Maritime Safety Agency (EMSA) to provide satellite-AIS data services for a four-year period. Hisdesat, as prime contractor, will provide EMSA with exactView RT, exactEarth's second-generation real-time satellite-AIS data service. Actual revenues under this framework contract will be determined by the task orders placed by EMSA, which is at their sole discretion, but based on their prior service expenditure history, exactEarth estimates that it could generate revenues of between CA\$5.0-\$7.0 million for the Company over the life of the contract. Satellite-AIS is a navigational safety system by which ships relay information regarding their identity, position, speed and heading that is then captured by a satellite constellation, such as exactView RT. exactView RT consists of 58 operational satellite payloads and seven orbital spares that annually track a population of more than 600,000 unique vessels worldwide and

generate real-time Average Global Revisit rates. In addition, a unique inter-satellite relay link guarantees download and delivery to EMSA of the AIS positions with an Average Latency of less than one minute after the message has been sent by the vessel.

BW Group Upgrades Vessels to KVH HTS Network in New Five-year Contract

January 9, 2020 - KVH Industries announced that BW Group, one of the world's leading maritime groups in the tanker, gas, and offshore segments, has signed a new contract to continue KVH VSAT services for at least five years and is upgrading 102 vessels to utilize KVH's mini-VSAT BroadbandSM HTS network for advanced satellite communications. BW Group first chose KVH in 2013 to provide satellite connectivity for a portion of its fleet and since that time has rolled out KVH VSAT systems on additional vessels. The vessel migration is expected to be completed by the third quarter of 2020. Under the newly signed contract, BW will equip the majority of the 102 vessels with KVH's TracPhone V11-HTS, a 1 meter Ku/C-band maritime VSAT antenna introduced earlier this year and designed to deliver worldwide data speeds as fast as 20 Mbps down/3 Mbps up. The TracPhone HTS-series system is designed for KVH's mini-VSAT Broadband HTS network, which utilizes Intelsat's FlexMaritime service to deliver multi-layered coverage, enabling vessels to see multiple HTS and wide beam satellites for maximum availability of broadband service; the KVH network also utilizes additional capacity from SKY Perfect JSAT.

NTT DOCOMO and MobiledgeX Demonstrate Worldwide Distribution of 5G Applications in Japan

January 8, 2020 - NTT DOCOMO, INC. and MobiledgeX, Inc. have announced that they will jointly conduct a proof of concept (PoC) in Tokyo on January 22-24, 2020 to verify a solution that leverages multi-access edge computing (MEC) for the worldwide distribution of applications. With the era of fifth-generation (5G) mobile communications approaching fast, DOCOMO will collaborate with MobiledgeX to help a variety of partners distribute innovative 5G solutions worldwide. MobiledgeX's solution offers a developer portal site for distributing applications to MEC infrastructure, such as servers and storage systems, located on the edges of mobile operator networks that are close to customers in markets overseas. Developers, device manufacturers and other technology partners with stringent performance and data-governance needs will be able to distribute their applications quickly and easily worldwide, without having to confirm usage conditions or system availability in each operator's MEC infrastructure respectively.

Speedcast and Blue Arcus to Power 4G LTE Infrastructure for Australia's Norfolk Island Telecom

January 8, 2020 - Speedcast has been awarded a US\$3 million project to modernize the network infrastructure of Norfolk Island Telecom in Australia. Speedcast has partnered with Blue Arcus Technologies, a leading supplier of turnkey network solutions, to provide Norfolk Island Telecom with a cutting-edge 4G LTE mobile network, associated support systems, and PSTN soft-switch with fibre backhaul and multi-service access nodes. Using Speedcast's 4G LTE network infrastructure and satellite backhaul solutions, the operator is empowered to deliver faster broadband speeds and enhanced mobile services. As a provider of cloud-based 2G, 3G and 4G LTE mobile services and solutions, Speedcast plays a critical role in helping operators around the globe address the need for increased connectivity.

Blue Origin Opens New Headquarters in Kent, Washington

January 7, 2020 - Blue Origin opened its new headquarters and R&D facility in Kent, Washington. The facility is Blue Origin's hub of operations. Below are excerpts from remarks given by Blue Origin CEO Bob Smith. "2019 was a great year of progress and preparation for us, and 2020 is going to be even more remarkable - so we're growing quickly. We grew by a third last year and we're going to continue to grow at a rapid pace. We named this building the O'Neill Building after Gerard O'Neill, a physicist who envisioned millions of people living and working in space for the benefit of Earth. Gerard O'Neill was one of the visionaries who thought about how we go out into space in a quick and sustainable way so that we can preserve our planet".

Get SAT Deploys Dual SAT Terminal Solution with Inmarsat Global Xpress Service to Multiple U.S. Government Agencies

January 6, 2020 - Get SAT, an innovator in small, lightweight satellite communication terminals for airborne, ground, and maritime applications and Inmarsat announced a successful demonstration and deployment of a unique Dual SAT terminal solution for U.S. government agencies. The innovative solution employs Get SAT's lightweight micronized Milli SAT LM terminals using Inmarsat's worldwide Global Xpress Ka-band network. The solution significantly reduces installation costs and efficiently manages communications-on-the-move. Dual SAT provides an antenna diversity solution for mobility platforms where obstructions such as ship's superstructures would cause blockage for a single antenna system. A

fully automated software switching system that requires no external components, Dual SAT's two terminals operate redundantly as a single system to ensure complete high-speed connectivity. When the primary antenna is blocked, the alternate antenna is switched seamlessly to provide services. This solution is ideal for the roll on, roll off requirements of Special Operations and Executive Staff onboard Afloat Forward Staging Bases (AFSB).

WorldCast Group Expands with a New Office in Malaysia

January 6, 2020 - WorldCast Group, specialized in the design, development, and commercialization of innovative solutions for media, broadcast, and IIoT, announces the opening of a new office in Kuala Lumpur, Malaysia. The group, composed of two companies, WorldCast Systems and CONNECT, chose Kuala Lumpur for its strategic and central location, ideal for providing customers and partners in the Asian market with the best local service. The office opens its doors mid-January 2020 with the arrival of Victor Bidot, Regional Sales Manager, and Bastien Bahuét as Presales Engineer. This expansion consolidates the group's worldwide presence, which now generates 85% of its turnover from exports.

China's Quantum Satellite Links with World's First Mobile Ground Station

January 2, 2020 - China's quantum satellite - Quantum Experiments at Space Scale (QUESS) - has successfully linked up with the world's first mobile quantum ground station and conducted an encrypted data transmission in Jinan, Shandong Province. According to a source of the Jinan city government, the mobile ground station linked with QUESS at around 23:31 Monday when the satellite was approximately 500 km from the ground. The test successfully wrapped up after the ground station received encrypted data from the satellite for nearly eight minutes, said the source. The mobile quantum ground station, the world's first of the kind, weighs slightly over 80 kg. It was jointly developed by the University of Science and Technology of China, QuantumCTek Co., Ltd. and the Jinan Institute of Quantum Technology. The ground station used at the launch of QUESS weighed more than 10 tonnes. Researchers have been trying to reduce its size. The latest mobile version can be installed on a vehicle and the manufacturing cost has been significantly reduced. An experimental quantum communication network in Jinan has been connected to the Beijing-Shanghai backbone network, the world's first secure quantum communication backbone network.

KVH and Kongsberg Digital Install First Integrated Maritime IoT System on Active Working Vessel

January 2, 2020 - KVH Industries and Kongsberg Digital have announced the successful installation of their first joint maritime IoT system on an active working vessel. The team installed a KVH Watch VSAT antenna for IoT connectivity and the Kognifai Vessel Insight platform on Simrad Echo, a Norwegian research vessel owned and operated by Kongsberg, which will continue normal operations during the pilot maritime IoT project. Together, KVH Watch and Kognifai Vessel Insight provide an integrated infrastructure for IoT connectivity and vessel-to-shore data. Maritime IoT is a focus of great interest among ship owners, ship managers, and maritime equipment manufacturers who are seeking ways to improve vessel operations through real-time monitoring and data analysis. This bundled connectivity solution by two leaders in the commercial maritime market, KVH and Kongsberg Digital, is one of the first cases of an active working vessel using an integrated maritime IoT solution.

BROADCAST

Azercosmos Signs New Cooperation Agreements

January 30, 2020 - Azercosmos has signed cooperation agreements with Yuvelirochka channel of the Russian VES-Media company and TNV Planet channel of the Radio and Television company Noviy Vek based in the Republic of Tatarstan. According to the agreement, Yuvelirochka and TNV Planet channels will be broadcasted via Azerspace-1 satellite starting from February. Yuvelirochka is a Russian 24-hour TV channel on jewellery sphere and broadcasts the history of jewellery, advertising of exclusive jewellery, as well as auction programmes in this area. TNV Planet is a television channel dedicated to the protection of the cultural heritage of Tatarstan. TNV Planet provides news, informative, entertaining, artistic and its production content in the Russian and Tatar languages. Thanks to these new channels, the number of Russian channels broadcasted via Azerspace-1 satellite will get increase, meeting the growing demand for Russian channels in the region. This in turn will further popularize Azerspace-1 and its orbital position.

VITEC Drives the Streaming, Digital Signage, and Video Wall Experience

January 29, 2020 - VITEC, a worldwide leader in advanced video encoding and streaming solutions, announced it will display the flexible IPTV, digital signage, and video wall capabilities of its EZ TV IPTV &

Digital Signage Platform at ISE 2020. For the first time, the new EZ TV Player Lite™ will be on display. The patent pending EZ TV Lite™ technology enables multicasting of live streams directly to enterprise users' computers, without going through multi-unicast distribution servers. This unique solution enables organizations to scale live video services without the costs of on-premise transcoding equipment, CDN subscriptions, and costly seat licenses. The multicast-to-the-edge, plugin-free HTML5 player simplifies IPTV distribution complexity and manageability.

ATEME Awarded Grant for AI Video Delivery Innovation

January 24, 2020 - ATEME, a leader in video delivery solutions for broadcast, cable, DTH, IPTV and OTT, has been announced as a recipient of the i-Nov Innovation Contest grant for the IA4SEC project, involving its state-of-the-art video technologies. The project is operated by Bpifrance, the public bank for entrepreneurs, and supported by Programme d'Investissements d'Avenir (PIA), a program set up by the French government to finance innovative and promising investments in the territory. The video industry market continues to face a changing landscape with increasing complexity of video payload standards such as HEVC, AV1, VVC / H.266 and EVC / MPEG-5 part 1. ATEME's technology offers customers a path to the latest video techniques by leveraging artificial intelligence (AI). In the context of this project, ATEME proposed several levels of innovation in AI for video delivery. This included improvements in core encoding to enable bitrate reduction, Content Adaptive Encoding for higher video quality, and elastic encoding orchestration to optimize media supply chain and cloud usage. ATEME also outlined how AI can help in reducing latency for an enhanced OTT viewing experience.

VITEC Acquires IPtec to Strengthen Leadership in Broadcast Contribution and Remote Production

January 24, 2020 - VITEC, a worldwide leader in advanced video encoding and streaming solutions, today announced the strategic acquisition of IPtec Inc., a developer and manufacturer of industry-leading solutions for low-latency transfer of telemetry and video-over-IP networks. This acquisition is the third the company has made within this vertical in the last 18 months, continuing VITEC's growth in broadcast contribution and remote production. Effective this month, this acquisition will add IPtec's product families to the VITEC lineup. This includes the VNP Series video network processors, which support full-duplex encode-decode; H.264, AVC-I, and MPEG-2 video standards; and AAC and MPEG-1 Layer II audio standards, in a redundantly powered ½ RU package. The current IPtec VNP Series will be maintained as its product roadmap merges into VITEC's HEVC portfolio offering. VITEC will also add the TNP Telemetry Network Processor Series, which addresses the need for transmitting timing-sensitive data signals over IP networks in telemedicine, defense, and industrial applications.

BBC News Arabic Launches Now in HD Exclusively on Arabsat

January 21, 2020 - BBC News Arabic television has inked another long-term agreement with Arabsat to launch exclusively their first Arabic news channel in high resolution to the region, onboard of Arabsat BADR-4 which covers the entire MENA region and most of Western Europe. Starting January 1st, 2020, the HDTV FTA channel will join the same video neighborhood with her sister channel BBC News Arabic SD, and among other leading international and regional news channels, which can be received across the region with the minimum receive dish size.

ENENSYS' OneBeam, World's First DVB-SIS Standard Ready for Deployment

January 20, 2020 - ENENSYS Technologies, a leading provider of media delivery solutions, has announced that the latest release of ENENSYS' OneBeam solution brings it into compliance with the DVB-SIS (DVB-Single Illumination System) standard. With this modification, ENENSYS has become the first provider capable in delivering a complete DVB-SIS system. Following OneBeam's initial launch, ENENSYS has implemented this solution for several network broadcast operators. With each deployment, the solution has been updated, keeping ahead of market changes and needs. ENENSYS' OneBeam DVB-SIS solution allows Network Broadcast Operators to optimize their TV delivery services using a single satellite feed for DTH and DTT in a Single Frequency Network (SFN). One satellite distribution serves both DTT transmission sites and DTH consumers. At the DTT transmission site, the ENENSYS TxEdge OneBeam creates the DVB-T or DVB-T2 SFN bouquet based on the services carried over DTH satellite. TV viewers who cannot receive DTT signals receive the DTT services over the same DTH feed. This brings Network Broadcast Operators a step closer to attaining their goal of 100% TV delivery coverage.

Mediengruppe RTL Deutschland to Continue Broadcasting in SD with SES on ASTRA 19.2

January 10, 2020 - Mediengruppe RTL Deutschland GmbH, one of the leading private broadcasters in Germany, has renewed its standard definition (SD) distribution agreement with the satellite operator SES.

The complete free TV channel package of the Mediengruppe RTL Deutschland will continue to be available via SES's ASTRA satellites at the prime orbital location of 19.2 degrees East, which reaches 118 million TV homes across Europe. The channel line-up includes RTL, VOX, ntv, NITRO, RTLplus, SUPER RTL, TOGGO plus and RTLZWEI, as well as the regional programs. The new channel VOXup, which was launched on 1 December 2019, is also part of the agreement. All broadcasts will be transmitted in the MPEG-2 SD format till 2024.

BT Takes Action to Combat TV Broadcasting Piracy

January 10, 2020 - BT is stepping up its efforts to combat the illegal piracy of premium subscription-based content through a new partnership with leading video infrastructure company, ATEME. BT is using the company's sophisticated encryption techniques to protect satellite uplinked content in the most secure way possible, and will be offering this technology to its media and broadcast customers around the world to help reduce the number of illegal streams. BT is the first in the UK to provide the industry with ATEME's encoder which uses BISS-CA (Basic Interoperable Scrambling System Conditional Access) encryption. By using ATEME's encoder, BT's Media and Broadcast unit will be able to deliver the highest video quality at minimum bitrates with minimum latency, while keeping broadcasts secure. The BISS-CA protocol used in ATEME's encoder is the perfect match for high quality video transmissions as the secure encryption tool enables broadcasters to protect themselves against piracy. ATEME's encoder can be used across a variety of systems and software and determines the origin of an illegal stream with content being watermarked. Media rights holders can also grant and revoke receiving rights in real-time, securing broadcasts from the source to its end destination.

Encompass and beIN Asia Pacific Extend Comprehensive Services Agreement

January 8, 2020 - Encompass Digital Media, a global technology services company that delivers end-to-end video solutions to television networks, broadcasters, sports leagues and OTT service providers, and beIN ASIA PACIFIC have signed an agreement to extend their current contract covering playout, streaming and distribution services. For many years, Encompass has been delivering beIN sports feeds from the facility in Singapore. The partnership enables beIN Asia Pacific to meet the changing needs of live sports broadcasting as Encompass provides a range of services such as channel playout, global distribution, OTT/TVE streaming, live events, disaster recovery and radio.

Gearhouse Gears up for a Summer of Sport with New Flyaways

January 8, 2020 - Gearhouse Broadcast, a leading provider of outside broadcast trucks and flyaway production kits, is building further systems in preparation for premier sporting events in 2020, including a major football competition in Europe. Central to the new flyaway kits is the Platinum™ IP3 router from Imagine Communications. The key to success in building flyaways is to create a system which provides all the resilience and reliability needed for live broadcasting, but in a compact footprint. As the name suggests, these often have to travel by air freight to meet deadlines, where additional space and weight can be prohibitively expensive. The key project for which these flyaways are designed requires support in 12 locations over a four-week period in June 2020. The kits will provide live production functionality. The Platinum IP3 routers incorporate integral multiviewer technology, reducing space in the racks and simplifying setup. The order also includes a number of modules from Imagine's Selenio 6800+™ processing range, along with Magellan™ router control panels.

LAUNCH / SPACE

Arianespace at OneWeb's Service for the Second Time

January 30, 2020 - For its second mission of the year - and the initial flight in 2020 with the Soyuz medium-lift launcher - Arianespace will perform the second launch for OneWeb's global constellation, orbiting 34 satellites. This 50th Soyuz mission conducted by Arianespace and its Starsem affiliate will be operated from the Baikonur Cosmodrome. It will pave the way for the constellation's deployment phase - for which Arianespace is to perform 19 more medium-lift Soyuz launches from three spaceports (Kourou, Baikonur and Vostochny) during 2020 and 2021 as well as the Ariane 62 maiden flight. By operating this second flight on behalf of the global communications company OneWeb, Arianespace participates in the fulfilment of its customer's ultimate ambition: providing internet access for everyone, everywhere. Flight ST27, the 27th Soyuz commercial mission from the Soyuz Launch Complex in Baikonur Cosmodrome performed by Arianespace and its Starsem affiliate, will put 34 OneWeb satellites into a near polar orbit at an altitude of 450 kilometers. After separation, the satellites will raise themselves to their operational orbit.

AAC Clyde Space Wins Satellite Order from NSLComm

January 28, 2020 - AAC Clyde Space has received an order from Israeli NSLComm for one 6U satellite and services, with a total value of approx. 15 MSEK (GBP 1.2 million). NSLComm has also appointed AAC Clyde Space "preferred supplier" in its planned satellite constellation. AAC Clyde Space will manufacture, launch, commission, operate the satellite and deliver a ground segment software solution. The satellite is planned to launch in Q3 2021. AAC Clyde Space delivered a 6U satellite to NSLComm during 2019. This satellite, NSLSat-1 carrying a 60-centimetre dish antenna, has reached most of its mission goals, communicating at all frequencies. The new satellite, NSLSat-2, is the first satellite of an intended commercial constellation.

Entry into Commercial Service of EUTELSAT 7C

January 27, 2020 - Eutelsat Communications' EUTELSAT 7C satellite has entered full commercial service and is ready to support broadcast customers across Africa, Europe, the Middle East and Turkey. transponders. Successfully launched from Kourou, French Guiana, on 20 June 2019, the satellite is co-located with EUTELSAT 7B at 7° East, increasing capacity at this dynamic neighbourhood by 19 transponders. During the night of 27-28 January 2020, the Eutelsat teams migrated a number of services from EUTELSAT 7A to EUTELSAT 7C, including Turkish Pay-TV platform Digiturk, Turkish national broadcaster TRT, and Globecast UK for coverage across Europe and the Middle East. EUTELSAT 7A will be transferred to another orbital location as part of Eutelsat's fleet optimisation strategy.

JAXA: Agreement on Data Utilization of Earth Observation Satellite with FAO

January 23, 2020 - Japan Aerospace Exploration Agency (JAXA) has agreed to collaborate with Food and Agriculture Organization of the United Nations (FAO) on data utilization of Earth observation satellites. Leveraging this cooperation, JAXA and FAO will be monitoring forests and mangroves around the world by JAXA's satellites with L-band Synthetic Aperture Radar (SAR). Only JAXA has observed forest using L-band radar (SAR) technology from 1992. Observation data of global forests that JAXA has been accumulating for over 25 years will be provided to the System for Earth Observation Data Access, Processing and Analysis for Land Monitoring (SEPAL) that is FAO's toolkit for monitoring forest and land-use. Additionally, this cooperation supports JAXA to improve the accuracy of its satellite data. SEPAL offers anyone easy-to use access to satellite data and supercomputing power, allowing them to create critical forest and land cover information in their efforts to mitigate and adapt to climate change, and now is used in 160 countries.

Astroscale Awarded Up To US \$4.5 Million Grant from Tokyo Metropolitan Government to Commercialize Active Debris Removal Services

January 23, 2020 - Astroscale Holdings today announced it has been awarded a grant of up to US \$4.5 million from the Tokyo Metropolitan Government's "Innovation Tokyo Project" to build a roadmap for commercializing active debris removal (ADR) services. The project, which was launched last year, aims to subsidize up to half of the expenses required for the commercialization and development of innovative services and products for venture companies and small and medium-sized enterprises. Astroscale received the maximum amount covering half of its US \$9 million application and will use the funds over three years to commercialize its ADR services and develop global sales channels with satellite operators, national agencies and the insurance market. The grant will also be used to continue pursuing joint research and development contracts, conduct safety and risk assessments of client satellites, and grow the finance and human resources departments.

ESA and Airbus Sign Contract for Bartolomeo Platform on the International Space Station

January 23, 2020 - The Bartolomeo platform from Airbus gives new opportunities for research on the International Space Station (ISS). The European Space Agency ESA has now firmly booked a payload slot for a Norwegian instrument to monitor plasma density in the Earth's atmosphere. The Bartolomeo platform - named after Christopher Columbus' younger brother - is currently in the final stage of launch preparation at Airbus in Bremen and is scheduled for launch to the ISS in March 2020. Bartolomeo is developed on a commercial basis by Airbus using its own investment funds and will be operated in cooperation with ESA.

The Netherlands Ministry of Defence Subscribes to Maxar's SecureWatch Platform

January 20, 2020 - Maxar Technologies announced the Defence Geographic Agency (DGeo) of The Netherlands Ministry of Defence signed a multi-million dollar, multi-year subscription to SecureWatch, the company's cloud-based geospatial intelligence (GEOINT) platform. DGeo will leverage SecureWatch to enrich its geospatial foundation data holdings and derivative product portfolio that aid critical decision-making within The Netherlands Ministry of Defence (MoD). Through SecureWatch, DGeo will have access

to Maxar's 110-petabyte, high-resolution satellite imagery library, daily imagery collections, Vivid and Metro imagery mosaics, FirstLook service and synthetic aperture radar data from MDA's RADARSAT-2 satellite. When the WorldView Legion constellation imagery is available after the first satellites launch in early 2021, DGeo will also access it via SecureWatch. The abundance and variety of geospatial data available in SecureWatch will inform and support the MoD's information-driven activities such as mission planning, disaster response and border security, among other purposes.

SpaceX Complete Final Major Flight Test of Crew Spacecraft

January 19, 2020 - NASA and SpaceX completed a launch escape demonstration of the company's Crew Dragon spacecraft and Falcon 9 rocket on January 19. This was the final major flight test of the spacecraft before it begins carrying astronauts to the International Space Station under NASA's Commercial Crew Program. The launch escape test began at 10:30 a.m. EST with liftoff from historic Launch Complex 39A at NASA's Kennedy Space Center in Florida on a mission to show the spacecraft's capability to safely separate from the rocket in the unlikely event of an in-flight emergency. As part of the test, SpaceX configured Crew Dragon to trigger a launch escape about 1.5 minutes after liftoff. All major functions were executed, including separation, engine firings, parachute deployment and landing. Crew Dragon splashed down at 10:38 a.m. just off the Florida coast in the Atlantic Ocean. NASA's Commercial Crew Program is working with the American aerospace industry as companies develop and operate a new generation of spacecraft and launch systems capable of carrying crews to low-Earth orbit and the International Space Station.

Update on EUTELSAT 5 West B Status

January 17, 2020 - On October 24, 2019, Eutelsat announced an investigation into a malfunction on one of the two solar arrays on its EUTELSAT 5 West B satellite. Pursuant to this investigation, the loss of the satellite's South solar array has been confirmed. With the exception of the South solar array, the satellite performance remains nominal. The attendant power loss means c.45% of the capacity of the satellite can be operated. The satellite is now expected to enter commercial service later in January and is expected to meet the designed life time. A number of mitigation actions aimed at assuring service continuity will be implemented, following the end of life in stable orbit of EUTELSAT 5 West A, for the largest possible number of customers. EUTELSAT 5 West B is fully insured against the eventuality of a partial or total loss by a launch-plus-one-year insurance for up to 173 million euros.

First Arianespace Mission of 2020 a Success: EUTELSAT KONNECT and GSAT-30 in Orbit

January 16, 2020 - For its year-opening flight of 2020, Arianespace successfully placed two communications satellites into geostationary orbit: EUTELSAT KONNECT for the operator Eutelsat; and GSAT-30 for ISRO, the Indian space agency. The launch took place onboard Ariane 5, on January 16 from the Guiana Space Center (CSG), Europe's Spaceport in Kourou, French Guiana. The all-electric Ka-band EUTELSAT KONNECT satellite is the first satellite to use the Spacebus NEO platform from Thales Alenia Space. This project has been developed within the scope of the Neosat program set up by the European Space Agency (ESA) and the French CNES. EUTELSAT KONNECT will offer total capacity of 75 Gbps. It will enable Eutelsat to provide Internet access services for companies as well as individuals at rates up to 100 Mbps. It will contribute to reducing the digital divide by bringing broadband connectivity to 40 countries in Africa and 15 countries in Europe. GSAT-30, designed and built by ISRO, using the enhanced I-3K platform, will deliver high-quality television, telecommunications and broadcasting services to all of India, including islands, with a design life exceeding 15 years. A year after the launch of GSAT-31, GSAT-30 will replace the Insat 4A satellite as ISRO continues to use space to bridge the digital divide on the Indian subcontinent, as part of its ambitious space program. This program calls on all types of space applications, including navigation, Earth observation, communications and the broadcast of educational programs, while also contributing to scientific research and planetary exploration.

Lockheed Martin Launches First Smart Satellite Enabling Space Mesh Networking

January 16, 2020 - A new era of space-based computing is now being tested in-orbit that will enable artificial intelligence, data analytics, cloud networking and advanced satellite communications in a robust new software-defined architecture. Recently, Lockheed Martin launched the Pony Express 1 mission as a hosted payload on Tyvak-0129, a next-generation Tyvak 6U spacecraft. Pony Express 1, an example of rapid prototyping, was developed, built and integrated in nine months, and was funded completely by Lockheed Martin Research and Development funding. This orbital proving ground is validating payload hardware and software, and is packed with new technology that fits into a satellite the size of a shoebox. Pony Express 1 is a dual-use payload that enables mesh networks in space through HiveStar™ and a second function that tests space to ground remote sensing. Future research missions this year, like Pony

Express 2, will further advance cloud networking concepts among satellites, as well as validating Lockheed Martin's SmartSat™ software-defined satellite architecture which enables streamlined hosting of flexible mission apps.

SpinLaunch Receives Additional Investment

January 16, 2020 - Jonathan Yaney, Founder and CEO of SpinLaunch, has announced that the company has received an additional investment of \$35 million for continued development of the world's first kinetic launch system, designed to provide the lowest-cost, environmentally responsible orbital launch system to serve the rapidly growing small satellite industry. The responsive launch system utilizes a large mass accelerator to provide on demand launches of small satellites in virtually any weather at an order of magnitude lower cost and higher frequency than any existing or proposed launch system. Investors include Airbus Ventures, GV, KPCB, Catapult Ventures, Lauder Partners, John Doerr and Byers Family. The funds from this investment will be used to scale the SpinLaunch team and technology and continue to build out SpinLaunch's new corporate headquarters in Long Beach, California, and complete the flight test facility at Spaceport America in New Mexico. In January 2019, SpinLaunch relocated to a new 140,000 square foot facility in Long Beach, California, and funds will be used for the buildout of this corporate headquarters and investing in equipment and machinery to be a world-class R&D manufacturing facility. In addition, the company is hiring additional talent for both its Long Beach headquarters and Spaceport test facility. First flight test is expected later this year.

OneWeb and SatixFy to Launch a Digital Technology Pathway Payload in 2021

January 13, 2020 - OneWeb and SatixFy UK announced plans to add a digital technology pathway payload that will include a full digital payload into OneWeb's launch schedule during 2021. This new technology will pave the way for satellites with a higher level of flexibility to efficiently support peaks in demand without oversizing the constellation. The digital-transparent payload will demonstrate full Beam Hopping capability in both Forward and Return Links. It will include an On-Board-Processing subsystem capable of running independent links on the User and Gateway links on the ground with different capacities. Electronically Steered Multi-Beam Antenna with True Time Delay beam-forming, capable of pointing and switching multiple beams to multiple directions simultaneously are an additional major feature. This combination of features enables significantly higher throughput to designated areas within satellite coverage, while continuing to meet all national security concerns. The Beam hopping capability also enables seamless handover for mobile devices, between beams and satellites. An example would be an Aero terminal for In-Flight Connectivity, able to operate on both LEO and GEO simultaneously and maintaining make-before-break connectivity between the rising and setting satellites. Maximum capacity can be directed from multiple sources to hot-spots like busy airports.

Thales Alenia Space to Build Amazonas Nexus for HISPASAT

January 10, 2020 - HISPASAT has awarded to Thales Alenia Space the construction of the Amazonas Nexus satellite, which will replace and expand the capacities of Amazonas 2 satellite, in orbit at 61° West. The new High Throughput Satellite (HTS) will enable HISPASAT to access new customers and markets, by delivering high capacity mobility services to the air and maritime transport sectors, among others. In addition, it will continue the provision of services to the current HISPASAT customers that use the capacities of Amazonas 2. As prime contractor, Thales Alenia Space will be responsible for Amazonas Nexus satellite design, production, testing and in-orbit acceptance tests. Amazonas Nexus features, as main novelty, a new generation Digital Transparent Processor (DTP), a technological breakthrough that is essential to increase the geographical flexibility of the mission to respond to eventual evolutions with respect to the initially envisaged commercial scenario. Based on the Spacebus NEO platform from Thales Alenia Space, the satellite will feature full electric propulsion, making the satellite lighter and contributing to lower the launch cost. With an estimated lifetime of 15 years, 20 kW satellite power and a mass of 4.5 metric tons at launch, Amazonas Nexus will be launched mid-2022.

China Successfully Launches New Communication Technology Experiment Satellite

January 7, 2020 - China sent a new communication technology experiment satellite into space from Xichang Satellite Launch Center in Sichuan Province on January 7. The satellite has entered the preset orbit. It will be used in communication, radio, television and data transmission, as well as high throughput technology test. The satellite was launched on a Long March-3B carrier rocket. It was the 324th mission for the Long March series carrier rockets. The new satellite and the carrier rocket were developed by the Shanghai Academy of Spaceflight Technology and the China Academy of Launch Vehicle Technology, under the China Aerospace Science and Technology Corporation.

Arianespace and ESA Announce the Euclid Satellite's Launch Contract

January 7, 2020 - Arianespace and the European Space Agency (ESA) announced the signature of a launch services contract for the Euclid satellite – with the mission's timeframe for liftoff starting in mid-2022 from the Guiana Space Center, Europe's Spaceport in French Guiana. Euclid is a medium-class astronomy and astrophysics space mission in ESA's Cosmic Vision 2015-2025 scientific program to investigate the history of the expansion of our Universe over the past 10 billion years, looking into the current acceleration of cosmic expansion fuelled by a mysterious component referred to as dark energy, and the growth of cosmic structures driven by the presence of dark matter. To this aim, Euclid will survey galaxies at a variety of distances from Earth in visible and near infrared wavelengths, over an area of the sky covering more than 35 percent of the celestial sphere. The Euclid mission will utilize either a Soyuz or an Ariane 62 launch vehicle from the Guiana Space Center, Europe's Spaceport in French Guiana (South America), with a launch timeframe starting in mid-2022.

SpaceX Successfully Launches Third Batch of Starlink Satellites

January 7, 2020 - SpaceX successfully launched its third batch of 60 Starlink satellites – the second designated “production” hardware, after launching an initial group of 60 early in 2019 to test the technology. This group launched aboard a Falcon 9 with a first-stage booster that has already seen service in three previous missions, including two in 2019, one of which was the first bulk Starlink mission in May 2019. This launch took off from Cape Canaveral Air Force Station in Florida, and delivered the satellites to an orbit 290 km (around 180 miles) above Earth. Starlink will provide high-speed, relatively low-latency broadband internet connectivity to customers on the ground, starting with those in the U.S. and Canada, with service potentially becoming available as early as later this year.

Satellogic to Launch Two NewSat Mark IV Spacecraft

January 7, 2020 - Satellogic, the first company to develop a scalable earth observation platform with the ability to remap the entire planet at both high-frequency and high-resolution, announced the impending launch of two new Earth Observation satellites. China Great Wall Corporation (CGWIC) will deliver the spacecraft to Low Earth Orbit via a Long March 2D rocket scheduled to launch from the Taiyuan Satellite Launch Center on January 15th. Both Satellogic satellites are equipped with two payloads: a multispectral camera with 1m resolution and a hyperspectral camera at 30m resolution. The launch will bring the total number of Satellogic spacecraft in orbit to 10. Satellogic has secured launch agreements to put another 80+ satellites in orbit over the next 24 months. The launch scheduled for January 15th falls under the multiple-launch agreement that Satellogic and CGWIC signed in January of 2019 for a series of dedicated launches to build out Satellogic's Earth Observation Satellite Constellation.

Roscosmos, S7 Start Working on Sea Launch Rocket

January 5, 2020 - The Progress Rocket and Space Center (RCC) (part of Russian space corporation Roscosmos), together with S7 Space (operator of the Sea Launch project), have begun to work on the parameters of a rocket for the Sea Launch projects, a spokesperson with the center told TASS. In June 2019, head of Roscosmos Dmitry Rogozin announced that he had introduced S7 Space representatives to the head and design staff of the Progress Rocket and Space Center. According to him, the state corporation is ready to either supply components, or create a rocket according to the technical specifications of a private company, TASS writes. S7 Group is the owner of the assets of the Sea Launch rocket and space compound where 36 launches (including 32 successful) were carried out by the end of May 2014. The sea compound comprises the Odyssey floating launch platform and the assembly and command vessel where rockets are assembled and control of pre-launch operations is exercised. The vessels are based in the state of California, the United States, TASS noted. In early December 2019, the S7 Space press service announced that the floating platform would be relocated to a Russian port in the Far East in 2020. The relevant permit was obtained from the US Department of State.

IAI to Develop and Build “Dror 1”, Israel's National Communication Satellite

January 3, 2020 - Israel Aerospace Industries (IAI) is to develop and build Israel's national communication satellite, the “Dror 1”. The Dror 1 is intended to meet the satellite communication needs of Israel for the next 15 years. The Dror 1 is comprised primarily of local Israeli technologies developed at IAI, including an advanced digital communication payload and “smartphone in space” capabilities, to provide communication agility throughout the satellite's lifetime in space. The agreement signed between the Israeli government and IAI in recent days represents the initiation of the government's decision from September 2018 to promote a long-term strategy for Israeli satellite communications. This government decision stems from the understanding that the capability for communication independence is of critical

national importance, as well as to enable the preservation of the knowledge and expertise that has been accumulated by Israel over the past years. The new satellite will be developed by IAI's Systems, Missile, and Space Group which is dedicated to developing and building air defense systems, such as the Barak MX, the Arrow 2 and 3 weapon system, advanced observation satellites, nano-satellites, satellite launchers, as well as the Beresheet lunar lander, which reached the moon in 2019. IAI is the national hub of expertise for radars, satellites, UAVs, civil aviation, and cyber.

EXECUTIVE MOVES

Comtech Telecommunications Promotes Michael Porcelain to President

January 29, 2020 - Comtech Telecommunications announced that its Senior Vice President and Chief Operating Officer (COO) Michael Porcelain has been promoted and will assume the additional role of President. Porcelain has been with Comtech since 2002. From March 2006 through October 2018, he served as Senior Vice President and CFO. From February 2002 through March 2006, he was Vice President of Finance and Internal Audit. Prior to joining Comtech, Porcelain was Director of Corporate Profit and Business Planning for Symbol Technologies, a mobile wireless information solutions company, where he was employed from 1998 to 2002. Previously, he spent five years in public accounting holding various positions, including Manager in the Transaction Advisory Services Group of PricewaterhouseCoopers.

AAC Clyde Space Forms New Executive Management Team

January 20, 2020 - AAC Clyde Space has appointed John Charlick COO and Ross Lang UK Head of Finance to the executive management team. John Charlick has a BEng Physics and Electronics from the University of Glasgow and MSc in Communications, Control and Digital Signal Processing from the University of Strathclyde. John gained his experience in programme management and product development from his time in multinational organisations Nokia and Motorola and has extensive experience in service delivery and service management. Ross Lang undertook his professional accounting exams whilst working in financial services, qualifying as a member of the Association of Chartered Certified Accountants. Before transition into his role at AAC Clyde Space, Ross has over a decade of experience providing SME businesses with financial advisory support, covering reporting, funding and strategy.

HERE Technologies Appoints Fred Hessabi as SVP and General Manager for the EMEAR Region

January 16, 2020 - HERE Technologies, a global leader in mapping and location services, today announced the appointment of Fred Hessabi as Senior Vice President (SVP) and General Manager of Europe, the Middle East, Africa and Russia. In his role, Hessabi will be responsible for driving regional revenue growth and diversifying the HERE customer portfolio. With HERE Workspace and HERE Marketplace at the core of the company's platform, Hessabi will identify opportunities for customers, partners and developers, across industries, to leverage the power of location intelligence to solve their business problems. Hessabi replaces Stefan Hansen, who left HERE in December 2019 to take a position at NTT Data. Prior to HERE, Hessabi was President of C3.ai International, a leading enterprise AI software provider for building enterprise-scale applications and accelerating digital transformation. In this role, he led and managed all C3 operations outside the USA, including sales, marketing and professional services.

Enrico Palermo Appointed Virgin Galactic's Chief Operating Officer

January 15, 2020 - Virgin Galactic Holdings has announced the appointment of Enrico Palermo as Chief Operating Officer (COO), effective immediately. In this newly created role, Enrico will be responsible for helping maintain efficiency and peak performance across the enterprise as it develops as a public company, and will lead the execution of specific company strategies and initiatives. Enrico currently serves as President of The Spaceship Company (TSC), the wholly-owned aerospace manufacturing and development subsidiary of VG. In this role, Enrico leads over 500 employees at the company's facilities in Mojave, California. He joined Virgin Galactic in 2006 as one of its first employees. Enrico will maintain his capacity of TSC President. Enrico brings a wealth of experience including operations leadership, engineering and technology knowledge, financial analysis and business planning proficiency.

Satcoms Innovation Group Appoints Helen Weedon as Managing Director

January 7, 2020 - The Satcoms Innovation Group (SIG) has appointed Helen Weedon as Managing Director. The appointment marks significant restructuring of the innovation forum. Helen succeeds Martin Coleman who will commence as a member of the group's advisory board. Helen has played a pivotal role within the group since 2011, in which time she has developed and implemented membership and public relations strategies. Through her own PR agency (established in 2007) Helen has built up extensive knowledge and

experience within the satellite industry.

RigNet Names Errol Olivier as Senior Vice President & Chief Operating Officer.

January 6, 2020 - RigNet announced organizational changes designed to accelerate RigNet's transformation strategy as the company continues to move 'up the stack' and to further improve the company's industry-leading customer service and responsiveness. Effective immediately, Errol Olivier joins RigNet as Senior Vice President and Chief Operating Officer. Reporting directly to President and Chief Executive Officer Steven Pickett, Olivier will be responsible for all customer-facing functions, including Sales, Sales Engineering, Service Delivery, Bids and Proposals, and the company's Global Network Operations Centers. Olivier brings more than thirty years of experience in the satellite communications industry. His previous roles include President and Chief Executive Officer of MTN Satellite Communications; President, Chief Executive Officer, and Chairman of Broadpoint; and President and Chief Operating Officer of CapRock Communications.

AMOS Spacecom's Itzhak Shnaiberg's Appointed Acting CEO following David Pollack's Retirement

January 6, 2020 - Itzhak Shnaiberg has been appointed Acting CEO of Spacecom by the company's Board of Directors, following the retirement of former CEO David Pollack on 1 January 2020. Shnaiberg, Spacecom's Deputy CEO since 2008, was among the company's founding management team.

REPORTS

Euroconsult Forecasts Satellite Demand to Experience a Four-fold Increase over the Next 10 Years

January 13, 2020 - In its latest analysis of satellite manufacturing and launch services, *Satellites to be Built and Launched by 2028*, Euroconsult projects that the satellite market will experience a radical transformation in the quantity, value and mass of the satellites to be built and launched with a four-fold increase in the number of satellites at a yearly average of 990 satellites to be launched, compared to a yearly average of 230 satellites in the previous decade. The market will reach \$292 billion over the next decade. This reflects a 28 percent increase over the previous decade which totalled \$228 billion in revenues. In its analysis, Euroconsult reviews strategic issues and trends for four categories of satellite operators, six types of orbit, six regions of the world, and seven distinct satellite application categories. It provides quantitative analysis of satellite numbers, mass, and cost with forecasts based on qualitative top-down and bottom-up assessments. With separate sections for both the manufacturing and launch industries, the research covers strategic issues, industry structure, financial performance, innovation and more for each and includes detailed profiles of ten manufacturers and four launch service providers.

WTA Releases LEO/MEO Constellations and the Teleport Report

January 8, 2020 - The World Teleport Association (WTA) released *LEO/MEO Constellations and the Teleport*, a new research report that shares insights from teleport, satellite and technology executives on their experience so far with non-GEO services, the potential of the constellations to change both the market and their businesses, and the steps they are taking today to prepare for a different tomorrow. The next eighteen months are critical ones for the first attempt since Iridium to loft a large-scale constellation of low-earth-orbit satellites that promise to transform global communications. OneWeb is leader of the pack of LEO constellations seeking to deliver low-priced, low-latency connectivity everywhere and its success could have major market impacts for GEO satellite operators and teleport operators. Already, LEO operators are in serious deal-making mode with operators of ground segment to provide the gateways they need to manage and provide access to their constellations.

UPCOMING EVENTS

SmallSat Symposium 2020, February 3-6, Silicon Valley, CA, USA, <https://2020.smallsatshow.com>

GSTC 2020 - Global Space and Technology Convention, February 6-7, Singapore, www.space.org.sg/gstc

Singapore Air Show 2020, February 11-16, Singapore, <https://singaporeairshow.com>

OTT Summit, March 5-6, Singapore, <https://ottsummit.asia>

Satellite 2020, March 9-12, Washington DC, USA, <https://2020.satshow.com>



Global Aerospace Summit, March 17-19, Abu Dhabi, UAE, www.aerospacesummit.com

36th Space Symposium, March 30 - April 2, Colorado Springs, Colorado, USA, www.spacesymposium.org

CABSAT 2020, March 31- April 2, Dubai, UAE, 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, maritime, aviation, broadcasters, Telco's, commercial business enterprises or aerospace industries.

Future of Video India, April 8, Mumbai, India, https://avia.org/all_events/the-future-of-video-india-2020/

NAB 2020, April 18-22, Las Vegas, Nevada, USA, www.nabshow.com

ConnecTechAsia 2020, June 9-11, Singapore, www.connectechasia.com

APSCC Summit @ConnecTech Asia, June 9-11, Singapore, www.connectechasia.com

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About APSCC

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