

APSCC Monthly e-Newsletter

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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 September 1 to September 30.

INSIDE APSCC

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The most frequent and largest ongoing virtual conference in the Asia Pacific satellite community – the APSCC 2021 Webinar Series incorporates industry veterans, local players, as well as new market entrants in a single event to reach a wide-ranging audience. The APSCC 2021 Webinar Series continues to play a vital role in supporting the industry in the Asia Pacific region and beyond with a brand-new format, a lengthened timeline, and a potentially unlimited reach. Register now and get access to the complete APSCC 2021 Webinar Series with a single password. To register go to <https://apscsat.com>.

SATELLITE BUSINESS

NCTS Selects Hughes JUPITER System to Deliver Satellite Broadband Connectivity in Egypt

September 30, 2021 - Hughes Network Systems, LLC announced that the National Company for Telecommunications Services (NCTS) has selected the Hughes JUPITER™ System Series 3 to deliver the ground segment requirements for operation of the Ka-band TIBA-1 satellite. The deployment of the Egyptian government-owned TIBA-1 satellite is a major milestone in the country's mission to connect the unconnected; the Hughes JUPITER System will enable delivery of Internet and telecom services to millions of people in remote and rural areas of the country. With features that yield higher bandwidth efficiency and lower service cost for operators than other ground systems, the Hughes JUPITER System is the most widely used VSAT system in the world. The latest iteration of the system, Series 3, is designed to support the industry's most advanced satellites that feature flexible payloads, sophisticated channelizers and Q- and V-band feeder beams. With a centralized network architecture utilizing powerful and highly virtualized data centers, high-density gateways and artificial intelligence, the system automatically manages weather and network traffic impacts to optimize the network and deliver fast speeds to end users. Initially, NCTS will employ two JUPITER System gateways, a network management system an initial delivery of remote terminals and an OSS/BSS solution, with installation expected in 2022. NCTS may order additional end-user terminals as public adoption of broadband services expands.

Fleet Xpress Offers Navigazione Montanari the Route to its Digital Destination

September 30, 2021 - Inmarsat is enabling an acceleration in the digitalisation plans of long-term client Navigazione Montanari, after agreement for the chemical and crude oil tanker owner to extend its use of Fleet Xpress to its entire fleet. The new agreement renews and extends Navmont's use of Fleet Xpress services across 13 ships and envisages the transfer of five more tankers from competitor services to Inmarsat's maritime broadband services by the end of 2021. The full scope of the agreement also covers Fleet Secure Endpoint cyber security protection, Fleet Care preventative maintenance and support and Inmarsat's Fleet Data IoT platform. Navmont will maintain separate bandwidth channels for vessel management and crew connectivity with the agreement offering the flexibility to adjust business data use on request. Navmont also becomes one of the first Inmarsat clients to adopt Fleet Care service maintenance support for Fleet Xpress. Fleet Care replaces annual maintenance agreements with a service offering support from Inmarsat engineers at ports worldwide without incurring hourly charges.

Intelsat to Provide Inflight Connectivity on Air France's A220 Fleet

September 29, 2021 - Intelsat has been selected by Air France to install its 2Ku high-speed, satellite-based inflight connectivity solution on 60 new Air France A220-300 aircraft. With deliveries commencing in 2021, the aircraft will fly to short and medium-haul destinations of the Air France network. Intelsat's solution is the industry's leading inflight connectivity (IFC) because it simply delivers the highest

throughput and best reliability to aircraft and devices globally, providing a superior connected passenger experience and exceptional Net Promoter Scores (NPS). Intelsat 2Ku is the most rapidly adopted satellite-based broadband connectivity technology in aviation, currently in use by leading airlines across North America, South America, Europe and Asia. Investing \$2 billion, initially, Intelsat is building a unified global 5G network that will support virtually any access technology, enabling the next generation of global mobility, internet of things, and 5G services. Combining software-defined technology and a multi-orbit, multi-layer, multi-band network, we bring airlines the scale they depend upon and a single, more powerful way to connect easily.

Inmarsat Makes Fleet LTE Offshore Agreement with Solstad Offshore

September 28, 2021 - Inmarsat has secured a contract for its new Fleet LTE service, covering the connectivity needs of several Solstad Offshore North Sea vessels. Offshore vessel operators commonly buy LTE and VSAT connectivity separately, using LTE when within range of shore, rigs or wind farm networks then relying on crew to switch manually to VSAT beyond 4G coverage limits. Costs can be hard to control where services are billed separately, while manual switchovers can mean suboptimal signals or service interruptions. Developed for flexibility, performance and affordability, Inmarsat Fleet LTE delivers hybrid connectivity via 4G cellular connectivity provided by Tampnet plus satellite coverage on Inmarsat's Fleet Xpress Ka-band and FleetBroadband L-band services, switching between networks on a fully automated basis. Algorithms within the Fleet LTE router switch seamlessly between LTE and VSAT so that service integrity, high speed data transfer and low latency are always optimised. The 'three-in-one' service provides a one stop shop for 4G, Ka-band and L-band without the complication of dual billing or the risk of disconnection. Following successful trials on board three Solstad vessels over the first three months of 2021, Fleet LTE will be commissioned on the remaining relevant vessels. With a fleet of around 100 vessels, Solstad Offshore is one of the largest offshore support vessel owners in the world.

Viasat's In-Flight Connectivity Service for Business Aviation Now Available through Collins Aerospace

September 28, 2021 - Viasat Inc. announced an expanded relationship with long-time partner Collins Aerospace ARINC Direct ("Collins Aerospace"), a value-added reseller (VAR) of business aviation solutions, to offer Viasat's Ka-band in-flight connectivity (IFC) system for mid- and large-cabin business aircraft. Today, Viasat offers three IFC solutions for the business aviation market: Ka-band, Ku Advanced, and Dual Ku-/Ka-band. By adding Viasat Ka-band to its service offering portfolio, Collins Aerospace can now provide all Viasat options to its customers, including Ka-band service for new installs and service upgrades for current Viasat Ku-band customers to either the faster Viasat Ka-band or the global Dual Ku-/Ka-band solution. The Viasat Ka-band and Ku-band systems have the same line-replaceable unit (LRU) footprint and can leverage existing aircraft wiring. Under the new agreement, Viasat's Ka-band in-flight connectivity system is available as a standalone service or bundled with other ARINC Direct solutions, offering Collins Aerospace customers a connectivity option that will benefit them in a variety of ways.

Spire Global and SpaceChain Announce New Partnership

September 28, 2021 - Spire Global, Inc. announced a new partnership with SpaceChain, a global space-as-a-service solutions provider developing the world's first decentralized satellite infrastructure (DSI). Together, Spire and SpaceChain are launching a mission to demonstrate the feasibility of blockchain technology computation in space and resolve land-based centralized infrastructure issues. Many in the blockchain industry have been working to reduce points of risk whereby a centralized administrator or authority can tamper with, or in the worst case, steal funds and data. One potential solution is to decentralize access by distributing data across multiple centers, countries, and continents. By deploying a solution in space, Spire and SpaceChain aim to maximize data security and increase the resiliency of computing operations. SpaceChain is reimagining the space industry, having worked with all quarters of the ecosystem ranging from launch service providers, national space agencies, satellite manufacturers to data analytics startups. The integration of blockchain and space technologies helps create a Decentralized Satellite Infrastructure (DSI) on which Decentralized Satellite Applications (DSA) can be built and run without the need for any land-based infrastructure.

Petredec Selects Inmarsat Fleet Hotspot Fleet-Wide after Consultation with Seafarers

September 23, 2021 - Inmarsat has secured a significant new commitment to its Fleet Hotspot internet portal service, following an extension of its Fleet Xpress service agreement with leading liquefied petroleum gas (LPG) transport group Petredec. Fleet Hotspot has been designed by Inmarsat to give crew onboard access to high-speed connectivity with the freedom to use their own devices. As the owner

of one of the most modern fleets of specialised LPG carriers in the market, Petredec is a longstanding Inmarsat customer, which recently renewed its Fleet Xpress service agreement across 27 operational ships and extended it to 10 newbuilds. Part of the renewal saw the Singapore-based owner commit for the first time to Inmarsat's fully managed Fleet Care maintenance, repair, and support service, and the Fleet Data IoT platform for data collection, transfer, storage, and analysis. Petredec is also committed to the highest standards where crew connectivity is concerned and is a signatory of the Neptune Declaration on Seafarer Wellbeing and Crew Change. The Inmarsat renewal led to trials of Inmarsat's Fleet Hotspot service. Rather than having crew demand for connectivity compete with operational bandwidth, Fleet Hotspot offers seafarers internet access via a dedicated portal, with billing options for owners including separate Master Service Agreements. Based on crew satisfaction feedback from a pilot Fleet Hotspot installation, Petredec is fast-tracking the adoption of the crew portal fleet-wide, replacing a previous crew connectivity service based on subscription. On completion, all 37 owned Petredec ships will be equipped with Fleet Hotspot, supported by the dual Fleet Xpress antennas on board.

Spire Global and Myriota Partner on Internet of Things Connectivity

September 22, 2021 - Spire Global, Inc. announced a partnership with Myriota. The partnership will leverage Spire Space Services to accelerate Myriota's global service deployment timeline, expanding the Myriota Network using Spire low-earth orbit nanosatellites. Myriota is the first large-scale, commercial, IoT-focused customer of Spire. Myriota will use Spire's existing satellite platform and continue to scale the Myriota Network as Spire deploys new satellites. Spire and Myriota plan to quickly ramp up Myriota's coverage to a global, low latency constellation, expanding Myriota's existing coverage in North America, Australia and New Zealand to other markets, including Europe. By leveraging Spire's proven constellation and global operations platform, Myriota expects to quickly and cost-effectively scale its IoT services to meet rising global demand. Spire's constellation of low-earth orbit nanosatellites is equipped with a range of software-defined radios (SDR) that let partners test, deploy, operate, and scale custom applications.

Kymeta Announces Patent for Multi-beam Capabilities Enabling Simultaneous Multi-orbit Connectivity

September 22, 2021 - Kymeta, the communications company making mobile global, announced today that the United States Patent and Trademark Office awarded Kymeta Corporation a US Patent for its multi-beam antenna configuration, enabling redundant, simultaneous, multi-orbit satellite connectivity. Kymeta's innovative patented technology can generate two beams simultaneously with a single antenna panel, enabling the tracking of two satellites across multiple constellations and seamless traffic hand off from the initial satellite to the second. Kymeta's metamaterials approach forms, receives, and transmits multiple distinct beams, each with its own receive/transmit (RX/TX) connection, for redundant connectivity and intelligent data management. This newly-issued patent adds to the more than 140 US and international patents and licenses issued to Kymeta, with an additional 178 pending, since the company was established in 2012. This issued patent represents an important step in the company's technical lead over the market through continued innovation and advancement of Kymeta's connectivity solutions.

Hughes and SES Demonstrate Multi-Orbit SATCOM for Remotely Piloted Aircraft

September 22, 2021 - Hughes Network Systems, LLC announced the successful first demonstration of a new multi-orbit satellite communications (SATCOM) capability for remotely piloted aircraft. Conducted for General Atomics Aeronautical Systems, Inc. (GA-ASI), the demonstration paired Hughes HM series software-defined modems and Resource Management System (RMS) with SES's satellites that operate in geosynchronous (GEO) and medium earth (MEO) orbits. SES's unique multi-orbit fleet, which delivers global coverage, high throughput and security, was leveraged to show how unmanned aerial vehicles, such as the GA-ASI MQ-9 series, can maintain crucial connectivity and resiliency, even in contested environments. The demonstration replicated a typical unmanned Intelligence, Surveillance and Reconnaissance (ISR) mission, transmitting high-definition video and sensor data to and from the unmanned vehicle to the command center. Based on the mission's pre-set policies, the RMS automatically switched the satellite signals to stay connected – even when a signal experienced interference and jamming scenarios. A quasi-instant and smooth beam switch took just seconds to complete, allowing a near real-time capability that enhances the military's Primary Alternative Contingency Emergency (PACE) planning.

OneWeb Strengthens Ground Segment with QuadSAT Antenna Validation Campaign

September 22, 2021 - OneWeb, the low Earth orbit satellite communications company is working with QuadSAT to perform verification of its ground segment antennas ahead of the global rollout of its LEO

constellation. In an initial stage, QuadSAT has carried out an antenna validation campaign at the Telespazio teleport in Scanzano, Italy. Using its unique drone payload for antenna testing, QuadSAT performed in-situ measurement generating antenna radiation patterns as well as north offset in antenna pointing. QuadSAT's drone-based system provides users with flexible and accurate antenna testing and calibration. Antennas can be tested anytime and anywhere, and it can perform a broad range of testing missions depending on requirements. QuadSAT pre- and post-flight software ensures repeatability, control over the drone during measurements, ease of operation and data delivery in a uniform format.

Marlink Unveils New Application Partner Programme to Accelerate Digitalisation in Maritime

September 22, 2021 - Marlink, the leading provider of smart network solutions, has launched its new Application Partner Programme, designed to support rapid digitalisation in the maritime industry by providing direct digital enablement benefits to ship operators and application providers. With over 600 ships currently connected and serviced under the new programme, vessel operators are already enjoying operational cost savings while leading application service providers are enlarging their scope and benefit from greater flexibility in provision of digital services. Marlink's Application Partner Programme creates partnerships with carefully-selected application partners in various key areas of ship operations and management to develop applications and solutions that are compatible with Marlink's smart hybrid network portfolio in order to innovate and provide tangible value to maritime customers and end-users all over the world.

Eutelsat's Konnect Russia and RTCOMM Sign MoU for Connectivity for Russian Sea and River Vessels

September 21, 2021 - Eutelsat Communications' Russian broadband operation, Konnect Russia and RTCOMM, Russia's leading distributor of satellite communications have signed a memorandum of understanding for the distribution of connectivity services in Russia. Thanks to the in-orbit resources and infrastructure of Konnect Russia, the first company to launch mobility services in Ka-band in Russia, RTCOMM will reinforce its offer of satellite solutions, notably its fast-growing business of maritime VSAT services for sea and river vessels, leveraging the Ka-band coverage of Eutelsat's powerful EUTELSAT 36C satellite offering unparalleled coverage of the Western part of the Russian Federation and part of Western Siberia. RTCOMM, a subsidiary of Rostelecom, is Russia's leading distributor of communication services to customers in any hard-to-reach places where cellular and wire telecommunications are underdeveloped or absent.

Inmarsat Launches OneFi, a Game-changing New Customer Experience Platform for Airlines to Monetise Inflight Connectivity

September 21, 2021 - Inmarsat announced the launch of its innovative new OneFi customer experience platform (CXP) for airlines. The first-of-its-kind solution will serve as a catalyst to monetise inflight connectivity by bringing a host of onboard services together within a single portal interface, which passengers can easily access using their own personal devices. OneFi delivers a rich airline-branded digital platform to enhance the passenger experience onboard flights. It allows passengers to order food and beverages, purchase seat upgrades, receive the latest flight and destination information, and sign-up to the airline's frequent flyer programmes, all in real-time from the comfort of their seat. In addition, passengers can browse the internet, stream videos and audio, shop online and enjoy other ecommerce offerings, using high-speed inflight broadband that airlines could choose to offer free-of-charge, funded through OneFi's sponsorship and advertising features. The launch of OneFi comes at a critical time for airlines, with the global pandemic having accelerated passenger demand for digital inflight experiences. Inmarsat's recent 2021 Passenger Confidence Tracker, the largest and most comprehensive global survey of its kind since the pandemic began, found that digital solutions that keep passengers connected and minimise their contact with cabin crew and fellow passengers can go a long way in boosting confidence. In addition, out of the 10,000 respondents worldwide, 41% believed inflight Wi-Fi had increased in importance after the pandemic.

OneWeb Completes TrustComm Transaction, Creating OneWeb Technologies

September 21, 2021 - OneWeb has completed its acquisition of Texas-based TrustComm Inc., a provider of managed satellite communications and professional services to commercial and governments organizations. OneWeb announced the planned acquisition of TrustComm in May 2021 and received all necessary regulatory approvals enabling the transaction to close. Following consummation of this transaction, TrustComm will become known as OneWeb Technologies Inc, a wholly owned subsidiary of OneWeb. Under the terms of a Proxy Agreement with the United States Government, OneWeb

Technologies will be tasked with providing governments of the “Five Eyes” alliance (U.S., U.K. Canada, Australia, and New Zealand); NATO; the U.N. and other strategic partners with global, next-generation, satellite connectivity. Led by former TrustComm CEO Bob Roe, OneWeb Technologies will be focused on meeting the complex needs of government customers. High-throughput, low-latency communications capacity in underserved and denied environments has long been an issue for the military and others, and OneWeb’s network is poised to address those challenges with security at the heart of its end-to-end managed services offerings.

Express-AM5 Satellite Will Warn about Seismic Activity

September 20, 2021 - Russian Satellite Communications Company (RSCC) and an international service provider Hunter Communications have put in place communication channels to monitor the earth's seismic activity. High-precision seismometers are installed in a number of regions of Yakutia, transmitting data via the Express-AM5 communications and broadcasting satellite located in geostationary orbit at 140° E. Over one and a half million square kilometers of Yakutia’s territory are earthquake-prone. Every year, hundreds of earthquakes of various strengths occur here - up to 9-10 points on the 12-point MSK-64 scale. The most dangerous are the northeast and south of Yakutia. The sensors allow you to record the vibration of the earth's crust, even if the source of the shock wave is located in another region of the globe, which makes it possible to predict an earthquake in advance. Going forward, the coverage of the VSAT network for monitoring seismic activity will be expanded to include the whole of Eastern Siberia.

Telespazio Selects Hughes HeloSat for Airborne Satellite Communications

September 20, 2021 - Telespazio, has selected the Hughes HeloSat™ solution for satellite communications (SATCOM) for Leonardo's helicopters. The solution combines the Hughes HM100 gateway and the HM400 modem for SATCOM on-the-move with technical support and systems integration. Once installed on helicopters like the Leonardo SW-4 Solo optionally piloted / rotorcraft uncrewed system, HeloSat will enable connectivity through-the-rotor using the Athena-Fidus Ka-band satellite capacity via the Telespazio ground station in Fucino, Italy. HeloSat is the only validated wideband BLoS SATCOM capability for uninterrupted, full-motion video on/off helicopters. At the core of the HeloSat solution, the Hughes HM System features an open standards architecture that enables resilient, cost-effective SATCOM aboard airplanes, UAVs, ships, and land-mobile platforms in addition to rotary wing aircraft. The system has been deployed for military operations worldwide, powering applications including Intelligence, Surveillance and Reconnaissance (ISR); search and rescue; emergency and disaster response; firefighting and VIP transport.

KVH Provides AgilePlans VSAT Services for Briese Schifffahrt Vessels and Crew

September 16, 2021 - KVH Industries, Inc. announces its successful and expanding AgilePlans relationship with established customer German shipmanager Briese Schifffahrt, which has rapidly grown its installed base over the last two years from 5 to 38 vessels with plans to continue. The flexibility of KVH’s no-commitment AgilePlans® program and the reliability of the global VSAT services in supporting critical operational usage and crew communications were cited by the company as reasons for selecting KVH. KVH AgilePlans is a Connectivity as a Service (CaaS) subscription-based model offering a comprehensive solution for maritime satellite communications. Without a costly capital outlay, the AgilePlans service eliminates barriers to upgrading to VSAT or switching from a competitor. It includes high-speed connectivity with unlimited email and texting via KVH’s mini-VSAT BroadbandSM HTS network, TracPhone HTS-series hardware, installation in as many as 4,000 ports and locations, cybersecurity protection, NEWSlink print and TV news content, KVH OneCare™ maintenance, and no long-term commitment, all for one monthly fee. KVH’s HTS network utilizes Intelsat’s FlexMaritime service to deliver global multi-layered coverage, enabling vessels to see multiple HTS and wide beam satellites for maximum availability of broadband service.

Kacific Launches Two-for-One GigWiFi Service to Offer Internet Access for Businesses

September 15, 2021 - Kacific Broadband Satellites has introduced a combination broadband service that gives enterprise customers with complex workplaces more flexible internet access. Called GigWiFi, the service combines the best of Kacific’s Gigstarter and Community WiFi services, allowing businesses to connect office workers to a head office LAN, while providing internet services to the surrounding community needing remote access to a WiFi service, all from a single powerful terminal. GigWiFi is Kacific’s most efficient solution for those needing unlimited, flexible high-speed broadband, targeted at agricultural, manufacturing and tourism businesses, government agencies and others with hybrid workplaces who needs both LAN and WiFi access but did not want the cost and overhead involved in

operating two terminals. Under this new two-for-one service, businesses can connect up to seven office staff on a Gigstarter plan and provide monitored WiFi access to workers in fields, warehouses and yards at the same time. A fully managed service, GigWiFi is easily installed, at a low cost. The Gigstarter segment delivers 55 Mbps (Up to 50Mbps in downlink speeds and 5 Mbps in uplink speeds) on an unlimited plan, while the Community WiFi segment delivers 25 Mbps (Up to 20 Mbps in downlink speeds and 5 Mbps in uplink speeds) via a separate plan. The GigWiFi kit consists of a 1.2m antenna, a 3W transceiver and a Newtech MDM2510 modem coupled with a Mikrotik router and Cambium WiFi access point.

Viasat Introduces Next-Generation Data-At-Rest Encryption Storage Device for Global Defence Customers

September 14, 2021 - Viasat UK Ltd., announced a next-generation encryption storage solution, the data-at-rest cryptography solid state drive (DARC-SSD), as the latest addition to Viasat's hardware encryption family, providing secure data protection for government and defence agencies around the world. Data-at-rest technology safeguards against when a device is stolen, lost or attacked, enabling the data to be entirely protected and secure, even without the device on hand. With threats increasing from adversaries, new encryption technology is critical to maintaining secure control over Intellectual Property (IP), personal and financial data, as well as protecting sensitive mission information that could put military operations at risk. DARC-SSD expands on Viasat's successful line of Eclipt[®] encryption solutions and is the first encryption storage device in Viasat's new family of data-at-rest solutions. Unlike previous Viasat encryption solutions, the DARC-SSD uses a Non-Volatile Memory Express (NVMe) interface, which offers increased compatibility and integration with the latest commercial-off-the-shelf (COTS) devices. Its small hardware footprint (M.2 2280) is designed to offer defence customers advanced data-at-rest encryption capabilities for protecting sensitive information on smaller, more compact laptops, tablets and small form factor (SFF) machines at Top Secret level and below.

MOCA Extends Relationship Naming Iridium and Thales as Official Communications Partners

September 14, 2021 - Iridium Communications Inc. is proud to share that the International Monohull Open Class Association (IMOCA) has extended its relationship naming Iridium and Thales as its official communications partners. IMOCA skippers will continue to rely on Iridium Certus[®] as their primary means of satellite communication at sea, after years of successful races and even life-saving communications provided. Beginning in 2019, IMOCA skippers set sail with the new state-of-the-art satcom system, relying on Iridium Certus during several high-profile yachting events that attracted a global audience, including the prestigious Vendée Globe race. As the official communications partners, Iridium and partner Thales will continue to equip the IMOCA racing fleet with the Iridium Certus satellite connectivity delivered by the Thales VesseLINK[™] 700 terminal .

In-Space Missions Limited Announces Acquisition by Bae Systems

September 14, 2021 - In-Space Missions has announced that it will become a wholly-owned subsidiary of BAE Systems with immediate effect. In-Space Missions was founded in 2015 and is based in Hampshire with more than 30 employees. It designs, builds and operates bespoke physical and digital customer space missions, providing a service to customers keen to get their technology on orbit quickly. It also recently launched a 'rideshare' satellite in June this year, 'Faraday Phoenix' combining six satellites into one spacecraft – allowing customers to take a 'slot' on board rather than having to build and manage an entire spacecraft and launch for themselves. This saves time and is more cost effective and sustainable. By bringing on board the expertise of In-Space Missions, BAE Systems will help to expand the UK's capabilities in low earth orbit satellites, creating valuable export opportunities, while keeping this country at the forefront of a new commercial space age.

Spire Global to Acquire exactEarth

September 14, 2021 - Spire Global, Inc. and exactEarth Ltd. have entered into a definitive arrangement agreement under which Spire will acquire exactEarth for approximately US\$161.2 million (CAD\$204.2 million) in cash and stock, which implies ~9.1x exactEarth's Enterprise Value to LTM revenue. Once completed, exactEarth will become a fully owned subsidiary of Spire and continue to operate from Cambridge, Ontario, Canada under the leadership of exactEarth's CEO Peter Mabson, reporting directly to Spire CEO Peter Platzler. The combined company aims to be transformative for customers and the maritime industry. Bringing together real-time and historical space-based maritime data, Spire and exactEarth will provide customers with innovative solutions that drive the digitalization of the almost US\$2 trillion global maritime industry, such as better fleet visibility for more efficient routing, cost savings from reduced fuel consumption, and a lower environmental footprint.

Gilat Receives US\$12 Million Service Agreement for Operation of Transport Network in Cusco, Peru

September 13, 2021 - Gilat Satellite Networks Ltd., a worldwide leader in satellite networking technology, solutions and services, announced today that Gilat received a US\$12 million service award for recurring revenues from broadband services in Cusco, Peru. operation & maintenance for a three-year period will be provided for the regional broadband transport network. This contract of the regional broadband service project follows the completion of the construction phase and successful acceptance test, granted for Cusco, earlier this year. Gilat is responsible for assuring high performance internet service over 2,000 kilometers of fiber optic, including more than a hundred communication nodes and data center.

RevGo Selected to Provide RF for SES O3b mPower Satellite Networks

September 10, 2021 - RevGo Global Inc. announced today it has entered into a US\$10 million dollar supply contract for its satcom RF ground station equipment with SES to help build SES's next generation high data throughput medium earth orbit (MEO) intelligent satellite network and managed services. RevGo's 40w and 20w Ka-Band BUCs will be an integral part of the overall terminal development for the maritime, land mobile, energy and cellular backhaul services for the upcoming SES O3b mPOWER system. RevGo's units will also be used for SES's first generation MEO system as well. The BUCs feature SNMPv3 and OPEN BMIP as part of the expanded feature set of the M&C system. SES plans to leverage RevGo Global's industry leading high data throughput RF block up-converters (BUCs) and low noise blocks (LNBs) while rolling out its global Ka-band satellite networks to deliver high-performance connectivity services to enterprises around the world.

Hughes and OneWeb Announce Agreements for LEO Satellite Service in U.S. and India

September 9, 2021 - Hughes Network Systems, LLC and OneWeb have signed a distribution agreement in the U.S. focused on enterprise services. In India, the parties have entered into an MOU for a strategic agreement to distribute services to large enterprises, small and medium businesses, government, telcos and ISPs, including in the rural and remote parts of the country. Services will be offered by Hughes Network Systems, LLC, and Hughes Communications India Private Ltd., respectively. Hughes and OneWeb intend to work together to broaden distribution globally, with Hughes to offer OneWeb's low-latency, high-speed connectivity for markets such as enterprise, government, commercial aviation and maritime, cellular backhaul, and community Wi-Fi hotspots. Today's agreement expands an established relationship between the two companies. Hughes, through its parent company EchoStar, is an investor in OneWeb. It is also an ecosystem partner to OneWeb, developing gateway electronics and the core module that will power every user terminal for the system. And Hughes is the prime contractor on an agreement with the U.S. Air Force Research Lab to integrate and demonstrate managed LEO SATCOM using OneWeb capacity in the Arctic region.

Intelsat Land Mobility Managed Service Takes Top Honours in Connected Mobile Platform Innovation

September 9, 2021 - Intelsat announced that its FlexMove managed service has won the 2021 Mobile Satellite Users Association (MSUA) award for Outstanding Leadership in Use of Mobile Solution. The award was presented to an Intelsat delegation during the 29th annual MSUA Satellite Mobile Innovation Awards Ceremony yesterday in National Harbor, Maryland. Designed to power data-intense applications anywhere they're needed, Intelsat FlexMove seamlessly increases the reach, reliability, and redundancy of terrestrial networks while enabling a new generation of land mobile services. Intelsat received the award for its ability to provide dependable, high-speed satellite connectivity for a telemedicine application in collaboration with Intelsat solutions partner, GRC. GRC bundles the power of FlexMove, the ultra-portable Satcube VSAT terminal and their GRC SCYTALE secure connectivity to keep the British Royal Navy seamlessly connected while in the field dealing with fast-changing situations. As part of the Royal Navy, the Commando Forward Surgical Group (CFSG) goes wherever the Royal Marines deploy, no matter how remote. Taking telemedicine to new heights, CFSG depends on satellite communications technology to ensure a fast response as it treats casualties in the field. Because Marines often need to deploy quickly, the CFSG was looking for a lightweight, easy-to-set-up high-speed internet solution that provides secure, reliable real-time surgical guidance, among other uses. Intelsat FlexMove solves that need and is available globally, at any time for response teams and mission-critical operations, through valued partners like GRC.

Turksat and Inmarsat Announce New Cooperation Agreement

September 9, 2021 - Inmarsat and Turksat announced a new cooperation agreement that deepens the existing relationship between the two companies and enables Inmarsat to offer its Global Xpress (GX)

services via Turksat satellites for GX customers in Turkey. The new cooperation agreement follows a Memorandum of Understanding agreed between the two companies at the end of 2015, an L-band contract signed in March 2016 and a Global Xpress (GX) partnership contract in March 2018. Initially, the two companies will focus on delivering GX services to the Government, security, defence, maritime and aviation sectors. The companies will expand their coverage to all sectors in the mid to long term, including Internet of Things (IoT).

Hapag-Lloyd Renews and Expands Inmarsat Fleet Xpress Commitment

September 9, 2021 - Inmarsat has expanded its agreement to deliver maritime broadband to Hapag-Lloyd, after the global transport group renewed its Fleet Xpress contract for a further five years and committed 33 more ships to the market's leading very small aperture terminal (VSAT) service. Under the extended agreement, which now covers 77 ships, the Fleet Xpress hybrid of Ka-band and continuous L-band back-up service replaces Ku-band systems onboard ships merged into the Hapag-Lloyd fleet following the earlier acquisition of United Arab Shipping Company (UASC) in May 2017. Scheduled Fleet Xpress installations enable seamless service migration based on the end of the outgoing supplier's contract. Hapag Lloyd was one of the first major global shipping companies to commit to Inmarsat's Fleet Xpress following service launch in 2016, transitioning all of its in-house managed ships to Inmarsat's maritime broadband service for vessel operations and crew connectivity. The five-year contract envisaged expanding data traffic and scalability to handle fleet growth. The new agreement includes the flexibility for Fleet Xpress-connected ships that are managed out of house and linked to Hapag-Lloyd operations to be brought under the same contract terms without renegotiation.

SpaceLink and Mynaric Finalize Agreement for Optical Communications Terminals

September 9, 2021 - Mynaric and SpaceLink have agreed upon the delivery and pricing for the first batch of CONDOR Mk3 terminals by late 2022 and additional units to be quantified subsequently. This is the second purchase by SpaceLink for Mynaric products following an initial order of optical communications terminals (OCTs) for the organization's MEO satellites. In addition to the Mk3s, the newest agreement includes delivery of two CONDOR Mk2 terminals. Along the product debut, Mynaric previously announced additionally an undisclosed launch customer for the CONDOR Mk3. The launch customer is scheduled to receive initial product delivery in Q4 2022 and has secured options for up to 20 units. Detailed technical specifications about the Mk3 terminal can be requested from the CONDOR Mk3 product page.

Seraphim Space Investment Completes Investment in Spire Global, Inc.

September 9, 2021 - Further to its announcement on 18 August 2021, Seraphim Space Investment Trust plc, a closed-ended investment company which invests in a diversified international portfolio of early and growth-stage Space Tech businesses, is pleased to announce the acquisition of the holding of Spire Global, Inc. from the Seraphim Space LP. As set out in the IPO prospectus, following its IPO Seraphim Space will acquire four assets from the Seraphim Space Fund for newly issued ordinary shares in the Company. This acquisition represents the first of those transactions to complete. Spire is one of the leading pioneers of the nanosatellite market with over 100 satellites operational today, creating one of the world's largest multi-purpose satellite constellations, which it uses to source hard to acquire, valuable data and enriches it with predictive solutions. Key markets include global weather forecasting, maritime and aviation. Spire recently successfully listed on the New York Stock Exchange through a merger with NavSight Holdings Inc.

ST Engineering iDirect Recognised for Leadership in Mobility with MSUA Satellite Innovation Award

September 9, 2021 - ST Engineering iDirect, a global leader in satellite communications, has been named as the winner of the Top Mobile User Experience Innovation Award at the 29th Annual Mobile Satellite Users Association's (MSUA) Satellite Mobile Innovation Awards. This recognition further cements ST Engineering iDirect's leading position in the mobility market and its continued dedication to the delivery of innovative solutions that enable its customers to offer seamless connectivity as new constellations, applications and markets emerge. ST Engineering iDirect's advanced satcom mobility solutions comprise a diverse, feature-rich set of capabilities and technologies to offer customers the utmost in choice and flexibility. Its suite of capabilities has evolved to cohesively manage satellite operators' and service providers' capacity and satellite links to vehicles, vessels and aircraft in motion and to tailor traffic on those links, thus enabling a high quality, seamless experience for end users.

Hughes JUPITER System Selected by DTP to Connect Citizens in Papua and throughout Indonesia with Satellite Broadband

September 8, 2021 - Hughes Network Systems, LLC announced that Indonesian Internet Service Provider PT. Dwi Tunggal Putra (DTP) has selected its JUPITER™ System platform to deploy satellite connectivity across 1,400 rural locations. DTP joins more than half a dozen other operators that have implemented the Hughes JUPITER platform across thousands of cellular backhaul and Internet access sites to support the LC1 and LC2 ("Leased Capacity") broadband initiatives of BAKTI, a division of the Indonesian Ministry of Communications and Information. The DTP implementation includes a JUPITER gateway and terminals powering service on the KTSAT 7 (KT7) satellite and will bring broadband across Indonesia and into Papua, a part of the country that has lagged in connectivity. Widely used across the industry, the JUPITER System is the de facto standard for satellite implementations worldwide with features that yield higher bandwidth efficiency and lower service cost for operators than other ground systems. The latest JUPITER technology incorporates Layer 2 functionality to integrate terrestrial and satellite traffic seamlessly. It supports the acceleration of 16,000 TCP sessions - an essential feature for applications with many simultaneous users, such as cellular backhaul.

ABS Launches Managed Data Services on ST Engineering iDirect's Multi-Service Dialog Platform

September 8, 2021 - ABS, a global satellite operator, in partnership with iSAT Africa, a leading satellite solution provider, announced the launch of managed data services on ABS-3A satellite. It will be operating on the ST Engineering iDirect Newtec Dialog® platform for the Europe, Middle East and Africa (EMEA) region. The deployment of this platform offers cost-effective, robust, high-speed broadband services for general enterprises, oil & gas and NGOs users. It is suitable for remote sites in Africa, Middle East and Europe not connected via terrestrial networks as well as for those locations that require diversification of network infrastructures and back-up services for fiber links. The Dialog platform offers high versatility and supports MF-TDMA and SCPC technologies with advanced bandwidth management features. The satellite links are operated through a dedicated antenna on ABS-3A at the teleport in Lario, Northern Italy, which offers high reliability, redundancy and interconnectivity to all the main data centers across Europe.

Eutelsat Completes OneWeb Equity Investment

September 8, 2021 - Eutelsat Communications confirms the closing of its \$550m equity investment in OneWeb announced on April 27, 2021. Subject to completion of the subsequently announced investments in OneWeb by Bharti and Hanwha, Eutelsat will hold a 17.6% stake. Rodolphe Belmer, Chief Executive Officer of Eutelsat, said: "We are delighted to close this investment in OneWeb, giving us a foothold in the Low Earth Orbit segment. We look forward to working in co-operation with OneWeb as its entry into operational service fast approaches, with almost 50% of the constellation now in orbit."

Inmarsat's New Velaris Connectivity Solution to Unlock Unlimited Possibilities of Fast-Growing Unmanned Aviation Industry

September 8, 2021 - Inmarsat announced the launch of its advanced new Velaris connectivity solution, which is uniquely positioned to serve as a catalyst for the safe and rapid growth of the Unmanned Aerial Vehicles (UAVs) industry. Powered by the Inmarsat ELERA global satellite network, Velaris will provide secure communications for commercial UAVs - commonly known as drones - to fly beyond visual line of sight (BVLOS) and seamlessly integrate with aircraft in commercial airspace. Backed by military grade cybersecurity, it allows operators to send their UAVs on long distance flights and access various applications, such as real-time monitoring, to ensure safe integration with other air traffic. In addition, Velaris allows a single pilot to remotely operate multiple UAVs at scale, making operations more commercially viable. Over the next seven years, the commercial UAV market is projected to increase from \$2.32 billion in 2021 to \$11.29 billion in 2028, marking a compound annual growth rate (CAGR) of 25.39% during this period¹. This will have a far-reaching impact on various aspects of business and society, ranging from cargo delivery, urban transport and surveillance to emergency services and disaster relief, including the supply of critical items such as medicine, test kits and food for remote communities.

Beam Budget, the Link Budget Tool by INTEGRASYS Empowering LEO Networks Design

September 8, 2021 - Beam Budget has been updated becoming an essential tool for the New Space Era constellations, LEO and MEO. By 2021 the company has been updating the LEO option, in order to be a flexible solution and pioneer in these new constellations. Beam Budget enables the user to manage a LEO network seamlessly, by calculating several dynamic links simultaneously in real-time, as well as selecting a period to obtain the necessary metrics, to ensure a reliable infrastructure. The latest development brings an update on the constellations database including the announced constellations up to date as well as the new feature of the laser inter-satellite link, which can be switched on and off in a matter of a click, in order to provide interconnected constellations in space as well as combined constellations multi-orbit, creating

a robust network design, and taking advantage of the new space race assets and latest constellations in any orbit. For example, a GEO satellite constellation can transmit to a small satellite LEO constellation to optimize latency for a particular application as well as LEO and MEO assets can connect via Laser with GEOs to ensure resiliency and availability. The tool allows comparing in a matter of clicks different constellation throughput and service for parabolic and flat antennas. INTEGRASYS has also improved the LEO & MEO reporting capabilities, with a Dual analysis of the forward and return link, as well as detailed information about the beams and coverage, the metrics are represented graphically so that also sales teams can understand the results and exporting the report to Excel or PDF.

Panasonic Avionics Launches Next-gen Ku Antenna in Partnership with Thinkom

September 8, 2021 - Panasonic Avionics Corporation today announced the launch of a new, next-generation Ku-band antenna, which will be developed in partnership with ThinKom Solutions, Inc. The newly designed ThinAir® builds upon ThinKom's flight proven, VICTS (variable inclination continuous transverse stub) technology. It will be offered by Panasonic Avionics to its airline customers for both line-fit and retrofit installations, with first deliveries occurring in 2023. The antenna will connect aircraft with Panasonic Avionics' global communications network of high-speed, high-bandwidth Ku-band satellites, which place capacity where it is most needed to meet the growing needs of airlines and their passengers. The new highly efficient and low-profile antenna offers airlines a wide range of advantages. These include support for both LEO (low Earth orbit) and GEO (geostationary orbit) satellite networks, higher speed throughput, greater aerodynamic efficiency, gate-to-gate operations, and reduced operating costs. Panasonic Avionics offers global high-speed connectivity service everywhere commercial aircraft fly and has over 210 regulatory approvals across the globe. Its network consists of high-throughput (HTS) and extreme throughput satellite technologies that provide the best end-user experience possible.

GTMaritime Reinforces Maritime Cybersecurity with Enhanced GTDeploy Software

September 8, 2021 - GTMaritime, a leading provider of secure data communications software to the shipping industry, has launched the latest version of GTDeploy, continuing its support to businesses as they tighten maritime cyber security processes. Patch management is a vital part of cybersecurity protection and GTDeploy enables ship owners and operators to send and install software updates and security patches remotely. Identifying and addressing gaps in software security reduces the attack risk, leaving fewer potential entry points for hackers to exploit. The latest version of GTDeploy features a number of updates including a brand-new interface to enhance user experience (UX) and a revised workflow which better aligns with customer's needs. UX updates include a new search function to simplify navigation and easier viewing of system resource information such as disk space, hardware, network and OS details.

Curvalux Secures Multi-million Dollar Order from Philippines Telecoms Giant Following Successful Trial

September 7, 2021 - Curvalux Partnership with Philippines mobile operator Globe expands to 45 new sites, delivering affordable broadband to remote communities and setting the blueprint for other hard-to-reach populations around the world. Curvalux, the disruptive innovator of new generation wireless broadband solutions, has secured a multi-million dollar order following groundbreaking commercial trials in the Philippines to test technology that will bring affordable, sustainable Internet connectivity to remote, low-income communities around the world. The company's partnership with Globe Telecom – one of the Philippines' biggest mobile operators – is designed to overcome the challenges of implementing large-scale telecoms infrastructure across the archipelagic state, comprising of more than 7,000 islands. Now, following the successful completion of commercial trials across the country, Globe has made a significant order for additional Edge Node systems to expand its network deployment using Curvalux's pioneering multibeam technology. Curvalux Edge Nodes can be installed on existing telecoms towers and provides coverage by using 16 separate narrow beams per sector to concentrate radio frequency energy into a tightly focused beam like a laser pointer. The beam isolation means that there is a far lower risk of interference from other sources, leading to vastly improved connectivity at distance in remote areas.

Hughes Selected by Eutelsat to Power New EUTELSAT KONNECT VHTS

September 7, 2021 - Hughes Network Systems, LLC announced that Eutelsat Communications selected the Hughes JUPITER™ System Series 3 to enable services on the new EUTELSAT KONNECT VHTS. Currently under construction and expected to launch in 2022, KONNECT VHTS will provide fixed broadband and mobility connectivity across Europe. Under the agreement, Hughes will design, manufacture and deliver JUPITER System gateways, end-user terminals and a network management system that support the

EUTELSAT KONNECT VHTS payload and enable powerful digital reconfiguration with narrow frequency granularity for extensive flexibility. Series 3 is the latest iteration of the JUPITER System, designed to support the industry's most advanced satellites, such as EUTELSAT KONNECT VHTS, that feature flexible payloads, sophisticated channelizers and Q- and V-band feeder beams. With a centralized network architecture utilizing powerful and highly virtualized data centers, high-density gateways and artificial intelligence, the system automatically manages weather and network traffic impacts to optimize the network and deliver fast speeds to end users. Utilizing a virtual pool of modem and IP processing resources, the system supports dynamic reconfiguration of gateways and data centers to meet demand, almost instantly. Advanced software defined networking (SDN) technologies immediately synchronize the dynamic reconfiguration of gateway connections. This latest agreement follows the successful completion by Hughes of the ground system for the EUTELSAT KONNECT satellite, which entered service in November of 2020 and utilizes JUPITER System gateways and user terminals to enable high speed satellite broadband.

Kymeta and OneWeb Successfully Tests LEO-GEO Capable Land and Maritime Flat Panel User Terminal

September 7, 2021 - Kymeta, the communications company making mobile global, and OneWeb, the low Earth orbit (LEO) satellite communications company, announced today the successful testing of the Kymeta u8 based LEO terminal with OneWeb's LEO satellite constellation. Kymeta and OneWeb performed a series of LEO satellite acquisition, tracking and throughput measurements in Toulouse, France. Kymeta plans to leverage these results in the definition of future-proof solutions that are fully integrated and compatible with the rapidly expanding OneWeb system. The u8 is the first commercially-available flat panel antenna to interoperate with the OneWeb satellite constellation. OneWeb is working with several new user terminal integrators like Kymeta to explore solutions that meet the needs of Government, Military, Enterprise, Maritime and first responder customers. The commercially-available Kymeta u8 supports fixed and mobile services enabling choice and redundancy for satellite users, and has demonstrated interoperability with low Earth orbit (LEO) and geostationary (GEO) satellite constellations.

Lloyd's Register and Inmarsat Form Industry-First Collaboration to Develop a Remote Survey Solution

September 7, 2021 - Lloyd's Register (LR) and Inmarsat have announced an industry-first collaboration between a satellite communications provider and classification society to provide a connectivity solution that will address challenges experienced during remote surveys. The new solution uses LR Remote, a specifically engineered application for remote inspection that enables crew members to livestream video, photos and audio from on board a ship to an LR technical specialist located elsewhere and will be empowered by Inmarsat's Certified Application Provider (CAP) dedicated bandwidth service called Fleet Connect, available on the Fleet Xpress digital platform. Fleet Connect provides an uninterrupted dedicated satellite link between vessels and seafarers, offering users function-specific bandwidth that is independent of business-critical vessel operations or crew communications. With no additional communication hardware required to run this application, the separation allows LR Remote to be enabled remotely without any intervention on-site. Fleet Connect provides dedicated bandwidth which is secure and reliable, meaning it can increase the potential of remote surveys on vessels where connectivity restraints have previously limited its use. This approach provides flexibility and 24/7 availability which enables surveyors to perform surveys efficiently using a blend of techniques, reducing the impact of unexpected situations on vessel operations, where surveyors and crew can quickly navigate problems using remote technology. The new solution is another step towards digital class, opening opportunities for future uses of vessel data in demonstrating compliance and driving deeper insight into vessel efficiency and fleet optimisation. The solution is currently being piloted by LR and Inmarsat with clients specialising in gas carriers and bulker carriers.

OneWeb Signs a Mission Critical Launch Insurance Agreement through Marsh

September 2, 2021 - OneWeb, has signed an insurance agreement for an aggregate insured value of more than \$1 billion through Marsh, the world's leading insurance broker and risk advisor. Marsh arranged a multi-launch insurance programme covering physical loss or damage to the remaining GEN 1 satellites and launch vehicles with a global panel of leading specialist insurers. The insurance programme underpins the next stage in the development of OneWeb's global communications capabilities. OneWeb has a longstanding relationship with Marsh and this agreement is the next stage in the collaboration between the two companies. The announcement follows the successful completion of OneWeb's 'Five to 50' launch programme that has delivered the satellites required to bring OneWeb services to Canada, the

UK, and Northern Europe later this year. OneWeb has secured all funding necessary to take its satellites into commercial service later this year, recently announcing additional funding from Bharti Global as well as Hanwha.

Yahsat Selects GMV to Provide Spacecraft Control Systems for Upcoming Thuraya 4-NGS Satellite

September 2, 2021 - Al Yah Satellite Communications Company has selected the Spanish group, GMV, to supply the Spacecraft Control & Flight Dynamics Systems for Thuraya 4-NGS, a next-generation L-band mobile communications satellite system scheduled to begin operations in 2024. Through this new partnership, GMV's best-in-class solutions will provide Yahsat's Thuraya 4-NGS with an advanced, multi-mission, multi-satellite Spacecraft Control System (Hifly) and Flight Dynamics System (FocusSuite) for greater functionality, reliability, flexibility and user-friendliness. The Spacecraft Control System will enable secure and reliable control of the satellite throughout its operational lifecycle, via easy to use yet powerful tools provided by the system. The Flight Dynamics System will help Yahsat to improve performance and ultimately maximize the lifetime of Thuraya 4-NGS, directly improving the longer-term capex efficiency for the company. GMV will also be responsible for the deployment and integration of the control center, as well as system maintenance and operator training. The agreement marks another important milestone for Yahsat as it continues to roll out its unique L-band next-generation system, a key component of its growth strategy and commitment to bring secure and reliable mobile satellite connectivity to users across the globe.

Omnispace and Vulcan Wireless Demonstrate Portable Military Radios Communicating via Commercial Satellite

September 2, 2021 - Omnispace and Vulcan Wireless Inc. today announced successful voice and data communication between its NGSO on-orbit satellite and a widely fielded model of mobile tactical military communications radios (PRC-117G). Omnispace is seamlessly uniting mobile and satellite to create the world's only truly global 5G mobile network. As part of Omnispace's Phase II Small Business Innovation and Research (SBIR) contract, the demonstration was in cooperation with U.S. Space Force's Space Systems Command. The contract was awarded as part of the U.S. Airforce's "Space Pitch Day," enabling Omnispace to bring next-generation narrowband capabilities to the warfighter. The Omnispace next-generation global 5G network is being architected to support "dual-use," mission-critical enterprise and secure government applications. Unlike legacy commercial and government networks, Omnispace's global system is being designed in line with 3GPP 5G NTN standards, which will enable interoperability for any compatible 5G commercial or government device.

Gilat Received US\$17 Million in Orders for Support of LEO Constellation

September 2, 2021 - Gilat Satellite Networks Ltd., a worldwide leader in satellite networking technology, solutions and services, announced today that it received additional orders of US\$17 million for support of gateways of low Earth orbit (LEO) constellations. Gilat's subsidiary, Wavestream, was chosen to supply gateway solid state power amplifiers (SSPAs) to a leading satellite operator to support the LEO constellation gateways. The orders were received as part of the previously announced contract. Wavestream is proceeding according to plan with delivery of orders for its Gateway-Class PowerStream 160Ka SSPAs, designed specifically for networks using wide bandwidth uplinks and high order modulation schemes. Wavestream's SSPAs were selected because of their best-in-class technical performance and their unmatched reliability in harsh environments, best addressing the stringent requirements of non-geostationary satellite orbit (NGSO) constellations installed in remote locations.

ORBCOMM Announces Completion of Acquisition by GI Partners

September 1, 2021 - ORBCOMM Inc., announced the completion of its acquisition by GI Partners, a leading US-based private investment management firm, in an all-cash transaction that values ORBCOMM at approximately \$1.1 billion, including net debt. Under the terms of the transaction, which was announced on April 8, 2021, ORBCOMM stockholders will receive \$11.50 in cash per outstanding share of common stock, representing a premium of approximately 52% to ORBCOMM's closing share price on April 7th and a 50% premium over the 90-day volume-weighted average share price through that date. The transaction was approved by ORBCOMM stockholders on July 8, 2021. Effective today, ORBCOMM is a privately held company, and its common stock is no longer listed on the Nasdaq Stock Market. PJT Partners and Raymond James served as financial advisors to ORBCOMM, and Milbank LLP served as legal counsel. Evercore served as financial advisor to GI Partners, and Simpson Thacher & Bartlett LLP and Morgan, Lewis & Bockius LLP served as legal counsel.

Eutelsat Selected by Lintasarta to Support Rural Connectivity Services in Indonesia

September 1, 2021 - Eutelsat Communications and Lintasarta, a premier service provider, have signed a contract for capacity on EUTELSAT 172B to support connectivity services in Indonesia. Lintasarta will be leveraging the unparalleled coverage of the EUTELSAT 172B satellite to fulfil the commitment to close the digital divide in the rural areas of Indonesia. This agreement highlights the integral role of satellite in providing a complete connectivity solution to end users. Lintasarta, a prestigious Information and Communication Technology (ICT) total solutions company in Indonesia, introduces various beneficial ICT solutions for many industries, including digital companies (marketplace), banking, finance non-bank, supply chain, resources, hospitality, healthcare, education, transportation, and government.

Korean Startup CONTEC That Is Gearing Up to Transform Space Tech

September 1, 2021 - CONTEC is working towards providing holistic solutions required for downstream data transmitted by satellites. Launched in 2015, the space tech company aims to capitalize on the emerging 'New Space' era. The startup is a spin-off company from Korea Aerospace Research Institute (KARI), offering Space Ground Station Services, Satellite Image Processing and Application Services, and a whole ground integration solution. The company utilizes AI-based detection and change detection methods to provide satellite image analysis and application services. CONTEC provides Ground Station (GS) service with its own ground stations. It currently services major EO satellites with its first station in Jeju (Korea), with a few other stations being constructed by the end of this year. The company plans to have 12 GSs beyond Korea, including Alaska, Chile, South East Asia, Europe, Australia and Africa by 2024. Customers may freely schedule satellite passes and download its data from a web-based customer interface CONTEC ONE, which enables pass reservation in one click. As long as users have a secured internet connection, they can use CONTEC's ground stations registered from any corner on the earth's surface. CONTEC's Satellite Imagery (SI) service, CONTEC INSIGHT is a web-based SI application service. The platform includes object detection and change detection by utilizing satellite images that can be useful to observe changes in SMART Cities, monitor disasters, and assist in stopping unlicensed constructions. Sejong City, the world's first ISO-certified smart city in the world, in Korea, has already signed a contract with CONTEC to receive its satellite image application service.

BROADCAST

SES Joins Forces with SoftBank Corp. to Deliver Live Sporting Events into Japan

September 30, 2021 - Japanese sports fans will be able to enjoy more premium sports content as SoftBank Corp. has partnered with SES for the aggregation and delivery of live sporting events to its corporate customers, such as TV stations and video distribution companies, SES announced today. Under the new agreement, SES, via its diverse global infrastructure of multi-orbit satellite fleets and fibre network, will aggregate content and deliver it directly to SoftBank. In providing this service, SES will use more than 300 downlink antennas located around the world, including those in its new Stockley Park facility in London, as well as its own fibre network with connections to other major fibre hubs. In addition, SES will establish a new link to SoftBank's fibre network.

CGTN Channels to Switch to HD in SES and Globecast Renewal Agreement

September 29, 2021 - Globecast, the global solutions provider for media, has extended its partnership with SES to deliver three CGTN channels in HD using Globecast's media services and SES's satellites at 19.2 degrees East. These channels continue to be available in SD quality. Under the multi-year agreement, Globecast will lease additional capacity on SES's prime neighbourhood to deliver CGTN News, CGTN Documentary and CGTN French, and will manage the uplinking and contribution services for these channels. After a simulcast period, all three Chinese public broadcaster's channels will broadcast exclusively in HD by the end of the year.

ST Engineering iDirect and USSI Global Close C-band Clearing Programmer Uplink Integration Deal

September 28, 2021 - ST Engineering iDirect's broadcast technology has been selected by USSI Global, a leading provider of customized network, broadcast and digital signage systems and services worldwide, to enable the modernization and compression of satellite programmers' distribution uplinks to comply with the Federal Communications Commission's (FCC) C-band spectrum transition. The upgrade work is part of the FCC's initiative to clear 300MHz of the C-band's 500MHz bandwidth frequency for 5G mobile services and relocate service providers within that spectrum to the remaining 200MHz. As the C-band spectrum is mostly used for TV and radio operations, many providers will vacate the 300MHz targeted for 5G services. These transitions will require affected providers to navigate complex technical changes including

installation of new and existing antennas and the repointing and filtering required for the antenna upgrades. ST Engineering iDirect is a key technology partner in the upgrade and will be providing broadcast equipment including M6100 modulators, USS0212 redundancy switches and FR0730 up and down converters, enabling USSI Global to ensure a smooth transition and high-efficiency, future-proof infrastructure. The modernized compression systems will serve extensive sports distribution encompassing MLB, NHL and NBA teams, as well as several major programmer distribution systems in the USA. The upgrade is expected to be completed by August 2023.

SES Sees Uptake in Cloud-Enabled Media Payout Service Worldwide

September 15, 2021 - An increasing number of broadcasters and channel operators worldwide are adopting SES's Cloud Payout service to better manage their linear TV channels and content assets flexibly and cost-effectively, announced SES today. This recent shift to cloud-based services means that SES now has more than 60 TV channels from Africa, Europe and Asia-Pacific that started utilising SES Cloud payout services since Q1 2021. Leveraging the elastic scale and economics of the cloud, SES's Cloud Payout enables TV broadcasters and channel operators the ability to reliably prepare TV content for broadcast in a matter of minutes regardless of where they are since there is no need for on-premise hardware. Designed natively in the cloud, SES's Cloud Payout provides unparalleled flexibility and scalability while leveraging virtualized hardware with modular design of payout functions such as archiving, playlist, playback, encoding or graphics – all to ensure resiliency and cost-savings for the media customers. One market with recent Cloud Payout momentum is Ethiopia. An increasing number of broadcasters on Ethiosat, Ethiopia's first-ever dedicated free-to-air (FTA) TV platform, have moved to SES's Cloud Payout service to better manage their linear TV channels and content assets flexibly and cost-effectively.

Televisa Choose ETL Systems to Strengthen Mexican Broadcast Market

September 1, 2021 - Televisa, one of the leading media companies in Latin America and operators of a direct-to-home satellite pay television system in Mexico, has chosen ETL Systems' RF distribution equipment for its ground segment upgrade, following a rigorous selection process. Televisa is one of Mexico's most powerful and influential TV networks, leading provider in the pay TV market. Producing some of the most popular telenovelas in the region, Televisa has played a major role in boosting the popularity of Spanish-language TV content. ETL Systems, designers and manufacturers of world-class RF distribution equipment, were chosen to replace and upgrade Televisa's existing 64 x 64 matrix that, as their operation had grown, had become obsolete. In order to receive signals from multiple satellites, Televisa required a bigger matrix to then distribute these signals to all integrated receiver decoders (IRDs). Following multiple tests, ETL's demo matrix impressed Televisa and they decided on ETL's Harrier 128x128 matrix for the upgrade, as it met Televisa's minimum capacity requirements of 72x80 also offering the option to expand in future.

LAUNCH / SPACE

CesiumAstro Announces Successful Deployment of Next-Generation Active Phased Array Experimental Satellites

September 30, 2021 - CesiumAstro, Inc. announces the successful launch and deployment of its first two satellites featuring their leading-edge communications payloads aboard a United Launch Alliance Atlas V-401 rocket. Dubbed Cesium Mission 1 (CM1), the duo of satellites will provide an on-orbit testbed for next generation wireless communications and sensing technologies. The CesiumAstro team is conducting operations to complete direct ground-to-spacecraft communications over our telemetry and control link. Initial system checkout and on-orbit commissioning will take up to one month, after which payload operations will commence. The satellites will run a multitude of experiments over the next several months, with CesiumAstro offering demonstration partnership opportunities to both commercial and government organizations interested in on-orbit evaluation of new algorithms, approaches, and operational models utilizing CesiumAstro's communications payloads and onboard edge processing.

Phantom Space Announces Agreement to Build and Launch 72 Satellite Constellation for Ingenu

September 29, 2021 - Phantom Space Corporation announced that they signed an agreement with Ingenu, provider of one of the leading Industrial Internet of Things (IIoT) technology platforms. The agreement includes the production, manufacturing and launch of a 72 satellite constellation (AFNIO™) that Ingenu will be utilizing to host their RPMA® IIoT payloads. This will allow Ingenu to offer full end-to-end solutions anywhere on earth. AFNIO™ will focus initially on end-to-end solutions for Smart Grid, Smart Factory, Smart Agriculture, Smart Cities, Oil & Gas, Mining, Asset Tracking and Logistics. Phantom will be

responsible for developing the spacecraft buses, system integration and launch of all 72 spacecraft. The majority of the satellites are expected to launch on Phantom's Daytona launch vehicle set to first launch in 2023. Ingenu developed and owns a long-range, Low Power Wide Area Network (LPWAN) technology for the Internet of Things. Utilizing its award-winning Random Phase Multiple Access (RPMA®) technology, it has been deployed in more than 50 terrestrial networks over the past ten years, on 5 continents. Ingenu will bring its technology and expertise to develop the world's largest space IIoT network dedicated to connectivity for machines. Operating on universal unlicensed spectrum, the company's RPMA® technology is a proven standard for connecting IIoT and machine-to-machine (M2M) sensors around the world and this project will allow RPMA® enabled end point sensors the ability to communicate directly with the satellites, also known as the Low Power-Satellite to Sensor (LP-S2S), anywhere in the world.

South Korea's Hancom Group to Launch Sejong-1 Satellite in 2022

September 29, 2021 - In the first half of 2022, Hancom InSpace, an affiliate of Hancom Group (Chairman Kim Sang-Cheol), working in cooperation with Spire Global will launch Korea's first private satellite for Earth observation. With this event, Hancom Group will be the first non-governmental entity in South Korea to put into space a satellite weighing less than 100 kg. With the launch of Sejong-1, Hancom Group will complete the first step in creating a worldwide remote sensing data service belt linking space, the aerial area, and the ground, using satellites and drones equipped with ultra-high-resolution sensors. With this unrivaled total-service belt, Hancom Group is targeting the agricultural sector, which shows the highest demand among the remote sensing service market. Hancom Group plans to penetrate the global market starting with Southeast Asia, which has a high proportion of agricultural industry. Hancom Group also plans to expand into other data usage capacities, such as forest resource management, disaster management, and detection of urban changes, and provide video data services tailored to various demands in the public market through cooperation with companies such as Hancom Inc., Hancom Lifecare, and Hancom MDS.

Thales Alenia Space Entrusted by ESA to Build a Prototype of the Next Generation of Ground Station for the European Satellite Navigation System EGNOS

September 27, 2021 - Thales Alenia Space has been selected by ESA in the frame of the Horizon 2020 program, for a new contract to design and develop a prototype of the next generation of ground station for the European Geostationary Navigation Overlay Service (EGNOS), called NLES-Next (Navigation Land Earth Station). The NLES is the EGNOS uplink station endorsing the task of EGNOS Signal In Space generation that is used by EGNOS to support critical positioning applications like aircraft navigation and landing. This element is a major contributor to the overall EGNOS system performances. In the fast evolving and increasingly challenging positioning applications that could benefit from EGNOS capabilities, the NLES modernization is a key enabler. Through this contract, Thales Alenia Space will offer a new generation NLES prototype embracing modularity, flexibility, scalability, and a high level of segregation to incrementally support new services like EGNOS data authentication or Integrity for High Accuracy Service. It will also exhibit boosted robustness at cyber security, and SiS levels to face new threats sources, thus unlocking the potential of the overall system to support a wide range of applications: from civil aviation, to rail, road, maritime, and from Safety of Life (SoL) service to non-SoL service.

Lunasonde and Exolaunch Announce Launch of Lunasonde's Gossamer Constellation on SpaceX's Falcon 9

September 23, 2021 - Lunasonde, a startup that focuses on subsurface imaging from space, and Exolaunch, a global leader in rideshare launch, deployment and integration services for small satellites, announce the launch agreements to fly a portion of the Gossamer satellite constellation to a sun-synchronous orbit aboard SpaceX's Falcon 9 Transporter missions in 2022. Though resources such as water and minerals power our world, there is no sustainable way to locate them and no scalable way to map them. Lunasonde is the next frontier in resource exploration, solving the problem of subsurface uncertainty by creating true 3D maps up to 2 kilometers underground. Lunasonde can locate groundwater, mineral deposits, and other geological resources and collects this data remotely via its Gossamer satellites. This idea was developed by Jeremiah Pate, CEO of Lunasonde, back in 2016 when he was still at high school, and gained support from Seraphim Capital and Techstars. The Lunasonde Gossamer satellites will fly on the rideshare missions that Exolaunch is manifesting on Falcon 9 throughout 2022 enabled by a Multi-Launch Agreement with SpaceX. The satellites will be safely delivered into orbit via Exolaunch's comprehensive mission management and proprietary deployment technologies.

Thales Alenia Space's Stratobus™ Stratospheric Airship Passes a New Development Milestone

September 23, 2021 - Thales Alenia Space has carried out a demonstration flight designed to validate the emergency recovery system for the Stratobus™ stratospheric airship, as part of the European Commission's HEMERA 2020 project. Stratobus™ is an autonomous airship 140 meters long, operating in the stratosphere at an altitude of 20 kilometers, which means that it belongs to the HAPS [High Altitude Platform System] family. It features a nonrigid envelope whose shape is maintained by helium at a higher pressure than the surrounding atmosphere. The demonstration flight of an open stratospheric balloon was carried out on September 11 at Kiruna, Sweden, and was designed to test the airship's emergency recovery capacity. The test entailed cutting the envelope at an altitude of 20 kilometers, using a digital-pyrotechnic system, to trigger the airship's controlled descent to the ground. Conducted by the Swedish Space Corporation, this 8-hour test flight was a resounding success, as it validated the airship's emergency recovery concept. A live video feed confirmed the system's effectiveness, in particular communications links with the ground, the command and control electronics, the digitalpyrotechnic system and its initiators, the pyrotechnic actuator and all instrumentation. Providing permanent regional coverage, Stratobus™ is a perfect complement to satellite systems. It can carry payloads to perform a number of vital missions, including border surveillance, monitoring of high-value sites on land or at sea (video monitoring of offshore platforms, etc.), defense and security (the fight against terrorism and drug trafficking, etc.), environmental monitoring (forest fires, beach erosion, pollution, etc.) and telecommunications (internet, 5G).

Astroscale Selects Rocket Lab to Launch Phase I of JAXA's Debris Removal Demonstration Project

September 22, 2021 - Astroscale Japan Inc. has signed an agreement with Rocket Lab USA, Inc., ("Rocket Lab"), a global leader in launch services and space systems, to launch its Active Debris Removal by Astroscale-Japan (ADRAS-J) spacecraft. Astroscale Japan's ADRAS-J spacecraft was selected by the Japan Aerospace Exploration Agency's (JAXA) for Phase I of its Commercial Removal of Debris Demonstration Project (CRD2), one of the world's first technology demonstrations of removing large-scale debris from orbit. Scheduled for lift-off from Rocket Lab Launch Complex 1 in Mahia, New Zealand in 2023, ADRAS-J will launch aboard an Electron rocket. Once deployed to a precise orbit by Electron's Kick Stage, the ADRAS-J satellite is designed to rendezvous with a Japanese upper stage rocket body, demonstrate proximity operations, and obtain images, delivering observational data to better understand the debris environment. The second phase of CRD2, which has yet to be competed, will demonstrate the de-orbit of the debris.

With Flight ST35 for OneWeb, Arianespace Sets a New Mark by Successfully Putting More Than 1,000 Satellites in Orbit Since its Foundation

September 14, 2021 - Performed on Tuesday, September 14 at Russia's Baikonur Cosmodrome, Soyuz Flight ST35 lifted-off with 34 OneWeb satellites onboard, bringing, after the successful deployment, the size of the fleet in orbit to 322. Flight ST35 was the 60th Soyuz mission carried out by Arianespace and its Starsem affiliate, and the tenth mission to the benefit of OneWeb. To date, Arianespace has launched 322 OneWeb satellites with ten Soyuz launches. Arianespace will perform nine more Soyuz launches for OneWeb through 2021 and 2022. These launches will enable OneWeb to complete the deployment of its full global constellation (650 satellites) in low Earth orbit by year-end 2022. The mission lasted three hours and 45 minutes. The 34 satellites were deployed during nine separation sequences, at an altitude of 450 km. It was also the ninth successful launch operated by Arianespace's teams this year, bringing to 1,021 the total number of spacecraft orbited since the start of company's operations.

Arianespace to Launch SES-17 on October 22

September 14, 2021 - SES-17 has completed its performance tests at the Thales Alenia Space facility in Cannes, France and is being prepared for shipment to Arianespace's Guiana Space Centre in Kourou, French Guiana on 22 September 2021. The spacecraft is scheduled to be launched by Arianespace, using an Ariane 5 vehicle on 22 October 2021, SES announced today. SES-17 is a very high-throughput satellite in geosynchronous orbit, built to serve North America, South America, the Atlantic Ocean and the Caribbean with Ka-band coverage. It will address demands for high-speed and flexible data connectivity across aviation, maritime, enterprise and government segments, advancing the region's digitalisation objectives and helping to bridge the digital divide. For commercial aviation, SES is proud to partner with its anchor customer, Thales Avionics.

Spaceflight Inc. Announces First Lunar and GEO Rideshare Mission: "GEO Pathfinder"

September 14, 2021 - Spaceflight Inc., the leader in global launch services, today announced a

breakthrough cislunar rideshare mission: “GEO Pathfinder.” As a secondary payload on board Intuitive Machines’ IM-2 South Pole Mission, Spaceflight will execute rideshare deployments in trans-lunar orbit, low-lunar orbit and beyond to geosynchronous equatorial orbit (GEO). Spaceflight will utilize a lunar flyby with its new propulsive transfer vehicle, Sherpa EEscape (Sherpa-ES), to deliver a payload from GeoJump, a new company dedicated to providing smallsat rideshare opportunities to GEO, that will also contain an Orbit Fab in-space fueling payload. The mission is slated to launch on a SpaceX Falcon 9 no earlier than Q4 2022. Spaceflight’s rideshare missions allow customers to quickly access lunar orbits affordably. Additionally, by leveraging Spaceflight’s propulsive Sherpa orbital transfer vehicles (OTVs), customers can reach farther destinations in the solar system as well as optimize their spacecraft for the mission without the complexities associated with carrying extra propellant and mass to do the orbit raising themselves.

Planet Expands Contract with NASA to Provide Data to All US Federal Civilian Agencies Researchers

September 14, 2021 - Planet announced that the Company has been awarded another contract by NASA under their Commercial SmallSat Data Acquisition (CSDA) Program. This contract grants all U.S. Federal Civilian scientific researchers and National Science Foundation funded researchers, including contractors and grantees, access to Planet data until September 2022. Planet recently entered into a definitive merger agreement with dMY Technology Group, Inc. IV, a special purpose acquisition company, to become a publicly-traded company. Planet was founded by three former NASA scientists with the mission to use space to help life on Earth by providing its unique, global data set of daily scans of Earth’s entire landmass to systematically and consistently monitor change on the planet. Core to this mission is Planet’s commitment to getting this proprietary data into the hands of the scientific community to further strengthen their research of the dynamic Earth.

Yahsat Selects SpaceX to Launch Thuraya 4-NGS Satellite

September 9, 2021 - Al Yah Satellite Communications Company has selected SpaceX’s Falcon 9 to launch Thuraya 4-NGS, the Group’s advanced satellite, which employs the latest satellite communications technologies, to expand Thuraya’s coverage across Europe, the Middle East, Central Asia and Africa. Thuraya 4-NGS is expected to spur Yahsat’s growth across new and existing product lines, with the new technology enabling the Group to maintain its leading position as the global leader in the satellite communications industry by delivering higher capabilities and flexibility while increasing capacity and coverage across Europe, Africa, Central Asia and the Middle East, enabling next-generation connectivity solutions for all customer segments, including defence, government and enterprise. Yahsat plans to launch Thuraya 4-NGS in the second half of 2023, with operations scheduled to commence in 2024. With operations in more than 150 countries spanning 5 continents, Yahsat is the preferred partner for reliable integrated satellite communication solutions and an industry centre of excellence for both government and commercial customers. The Company was established in the UAE in 2007 to meet the growing demand for satcom services by providing a secure and reliable means of global connectivity, regardless of geographic constraints. Thuraya, a subsidiary of Yahsat, operates the Thuraya satellite fleet and has a successful track record of over 20 years in providing innovative services in the global satellite communications sector.

SWISSto12 and Saturn Satellite Networks Collaborate to Bring Advanced Small Telecommunication Satellites to GEO

September 8, 2021 - SWISSto12 and Saturn Satellite Networks, a leading developer of small GEO satellite missions, announced a collaboration agreement whereby they join forces to build and market GEO telecom missions based on both MicroGEO, ISN, and Nationsat satellites. These missions deliver highly competitive connectivity from GEO orbit based on small and affordable satellites, thereby enabling new application cases for satellite connectivity that complement the offering of larger legacy satellites. In this collaboration, SWISSto12 will make its end-to-end advanced flexible payloads available to be matched with three different classes of small satellite platforms: the MicroGEO, the Intelligent Space Node (ISN), or the Nationsat which are all enabled by the cutting edge bus, with proven GEO heritage from Saturn’s affiliate company NovaWurks and its HISat technology. SWISSto12 will lead the marketing of turnkey GEO telecom satellites based on the MicroGEO platform of approximately 2kW payload power while Saturn Satellite Networks will lead the marketing of turnkey GEO telecom and high throughput satellites (HTS) based on the ISN and Nationsat platforms of approximately 5kW payload power. These classes of satellites complement each other in the emerging segment of smaller GEO telecommunication satellites and offer a complete set of solutions to address specific requirements of satellite operators. Missions addressed range from BSS and FSS spacecraft, which can provide a competitive replacement option for aging satellites, to HTS satellites for flexible global coverage or offering regional coverage for existing or emerging operators.

Available frequencies range from C-band to Q/V-band. The partnership capitalizes on the experience of spacecraft and payload engineering teams from both companies with workforce based both in Europe and the U.S.

Rocket Lab Lands Multi-Launch Deal to Deploy Entire IoT Satellite Constellation for Kinéis

September 8, 2021 - Rocket Lab USA, Inc has been awarded a contract to deploy an entire satellite constellation across five dedicated Electron missions for Kinéis, a global Internet-of-Things (IoT) connectivity provider. Scheduled for launch beginning in the second quarter of 2023, the constellation will enable Kinéis, a company backed by private and public investors including the French government's space agency CNES (Centre National d'Études Spatiales) and CLS (Collecte Localisation Satellites) an international space-based solutions provider, to improve its global IoT connectivity. The multi-launch contract with Kinéis, which is subject to standard termination and launch rescheduling provisions, follows a similar bulk buy of launches earlier this year to deploy nine satellites across five dedicated Electron missions as part of a constellation for BlackSky, a provider of real-time geospatial intelligence and global monitoring services. Kinéis currently operates the Argos system, an international scientific collaboration between CNES, the National Oceanic and Atmospheric Administration (NOAA), the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT) and the Indian Space Research Organization (ISRO), to monitor wildlife, fisheries, and to collect data about Earth's climate and environment through CLS. Kinéis' new constellation will complete the current system with more powerful 30kg-class nanosats that integrate IoT technology and a ship-tracking Automatic Identification System (AIS). Once deployed, this technology will allow Kinéis to expand across multiple industries and scale from 20,000 devices connected to millions.

ESA Agrees Resolution on Ariane 6 and Vega-C Exploitation and Future Space Transportation

September 3, 2021 - ESA Member States have agreed upon the boundary conditions for Europe's upcoming exploitation of Ariane 6 and Vega-C and request ESA to propose a roadmap for new and innovative space transportation solutions for the next decade and a framework for associated short cycle demonstrations. The Resolution agreed upon by ESA Member States mid-August sets the conditions for the first three years of stabilised exploitation of Europe's new launch vehicles, Ariane 6 and Vega-C at Europe's Spaceport in French Guiana. Driven by the launch needs of European institutions and taking stock of the volatile context of the worldwide launch services market, Member States have converged on a stable and secure basis for the exploitation of these new launch vehicles to provide guaranteed access to space for Europe in the coming years. The revised stabilised exploitation model is based on a European institutional launch service demand of four Ariane 6 vehicles (three Ariane 62 with two boosters and one Ariane 64 with four boosters, or two positions on a dual payload launch on Ariane 64) and two Vega-C per year on average. Price conditions for the associated standard launch service have also been agreed upon.

Rocket Lab Expands Space Systems Footprint with New High Volume Reaction Wheel Production Facility

September 1, 2021 - Rocket Lab USA, Inc. announced that construction is underway on a new production facility capable of supplying up to 2,000 reaction wheels per year to fulfill growing demand from satellite constellation customers. The new production facility, which joins Rocket Lab's existing 380,000 sq/ft manufacturing footprint, comes as Rocket Lab signs deals to supply reaction wheels for a number of undisclosed satellite constellations. The production line incorporates advanced metal machining centers optimized for unattended operation, automated production tools, and automated environmental testing workstations. More than 16 new roles are expected to support the new production facility and the growing Space Systems operations at Rocket Lab by the end of the year. The new production facility is the latest expansion of Rocket Lab's Space Systems business, which was strengthened in 2020 by the acquisition of Toronto-based Sinclair Interplanetary, a leading provider of high-quality, flight-proven satellite hardware including reaction wheels and star trackers. Sinclair Interplanetary pioneered high-reliability reaction wheels for small satellites and there are close to 200 wheels currently operating on orbit.

Thales Alenia Space Creates Digital Center in Luxembourg and Expands its European Footprint

September 1, 2021 - Thales Alenia Space is opening a Digital Center of Excellence in Luxembourg. With support from both the Luxembourg Ministry of the Economy and the Luxembourg Space Agency, this initiative is aligned with the country's digital and space strategies and will help energize the local ecosystem. The new entity, Thales Alenia Space in Luxembourg, will focus on the development of highly innovative digital solutions for the company's space communications, observation and navigation products. It will leverage on big data, artificial intelligence and cybersecurity technologies to address complex end-

to-end satellites systems' challenges, while fostering user experience excellence. One of the first tasks assigned to this center will be to contribute to the development of the company's Space Inspire product line, featuring the re-configurability of space communications missions, within the scope of the Novacom II project (as part of ESA's program of Advanced Research in Telecommunications Systems - ARTES). The new center will also be working on digital twins, digital solutions for best data preparation and exploitation on Earth observation, data valorization engines and much more. Thales Alenia Space's Digital Center is designed and organized in line with the model, work environment and practices already proven in Thales' Digital Factory, dedicated to the acceleration of the digital shift of Thales and its customers. The newly created Digital Center will employ specialists in digital technologies working in agile mode – e.g. design thinking, lean startup approach – to jointly develop innovative software products in conjunction with future users.

EXECUTIVE MOVES

Thaicom Names Patompob (Nile) Suwansiri CEO, Effective 1 January 2022

September 30, 2021 - Thaicom Public Company Limited announced that its board of directors has appointed Patompob (Nile) Suwansiri as the new Chief Executive Officer, effective January 1, 2022. He will succeed Anant Kaewruamvongs who will be retiring from the company at the end of 2021. Nile has been with Thaicom since its inception in 1992. He is responsible for the overall sales, marketing, business development, and international business activities of the company. His extensive operating experience has been internationally recognised in the satellite industry. Nile graduated from the University of Canterbury, Christchurch, New Zealand with a Bachelor of Electrical Engineering. He earned an Executive MBA degree with SASIN Graduate School of Management in Bangkok and completed Harvard Business School's Advanced Management Program.

Spire Global Appoints Kevin Petty as Vice President of Weather

September 29, 2021 - Spire Global, Inc., a leading global provider of space-based data, analytics, and space services today announced that it has appointed Dr Kevin Petty as Vice President of Weather. In his new role, Dr Petty will oversee Spire's weather solutions worldwide, leading a powerhouse team of Spire weather scientists. He will additionally guide Spire's weather data offerings across the Company's other solution areas, including maritime, aviation, Earth intelligence, and space services. Dr Petty will be based in Boulder, CO.

AAC Clyde Space Names Stefania Mandirola as COO and HR Director

September 29, 2021 - AAC Clyde Space, a leading NewSpace company, has recruited Stefania Mandirola as Chief Operating Officer as part of a strengthening of its management team to meet the broader needs of the group that now spans six companies on three continents. Stefania will take on the COO role from 6th October to ensure operational efficiency as the Group continues to expand. In the last 12 months AAC Clyde Space has acquired three companies in the United States, Netherlands and Sweden; set up a new space company in South Africa; and had rapid organic growth. To further support this development, Kulwinder Bhumbra will join the Group as HR Director in November.

Aerospace Industry Veteran Stephen Bennett to Join as COO

September 14, 2021 - Kepler Communications announced today that Stephen Bennett will be joining the Kepler Team as Chief Operating Officer effective September 20th, to contribute his expertise to accelerating Kepler's next phase of growth. This key executive hire follows closely behind Kepler's successful Series B round, announced in June 2021. At that time, Kepler announced that the funding would advance the company mission of delivering connectivity to other satellites and on-orbit assets, specifically identifying the start of Kepler's GEN2 satellite program. The formation of a second international subsidiary, Kepler Communications US Inc, was also highlighted. Steve Bennett is an aerospace industry veteran whose most recent role as SVP with Blue Origin saw him leading the team working on the New Shepherd program. He possesses an extensive track record showcasing successful aerospace programs. Immediately prior to Blue Origin, Steve was VP & GM at L3Harris, where he had overall responsibility for critical programs ranging from autonomous systems to radar platforms for some of the most demanding customers in the world.

Inmarsat CEO Appointed ESOA Vice-Chair

September 9, 2021 - The EMEA Satellite Operator's Association (ESOA) today announced that Inmarsat's CEO, Rajeev Suri, has been appointed as Vice-Chair of the ESOA Board of Directors. He joins ESOA Chair,

Steve Spengler, CEO of Intelsat, and fellow ESOA Vice-Chair, Kyle Whitehill, CEO of Avanti Communications, at the helm of the satellite industry association. Rajeev Suri, formerly CEO of Nokia, was appointed CEO of Inmarsat in March 2021. In the six-months since his appointment, he has sharply accelerated decision making, refreshed the company strategy, returned the business to strong growth and strengthened operational efficiency. He has also launched two major technology initiatives – ORCHESTRA and ELERA - focused on Inmarsat’s global mobility customer base. ORCHESTRA is a first-of-its-kind network that will seamlessly integrate GEO, LEO and terrestrial 5G into one harmonious solution. ELERA, which is ideally suited for Internet of things (IoT) applications, builds on the company’s leadership in L-band satellite services with breakthrough technologies.

Walter Z. Berger and S. Douglas Hutcheson Named Co-CEOs of Kymeta

September 7, 2021 - Kymeta, the communications company making mobile global, announced today that Walter Z. Berger and S. Douglas Hutcheson have been named Co-Chief Executive Officers of Kymeta. The senior leadership announcement is an exciting step for the company as they continue to develop transformational technology and innovative solutions across the industry. Starting September 1, 2021, Berger, formerly Kymeta’s President and Chief Operating Officer, will serve as President and co-CEO. Hutcheson, formerly Kymeta’s Executive Chairman, will serve as Executive Chairman and co-CEO. Their combined breadth of telecommunications and technology experience will further strengthen the company’s continued advancement forward and launch Kymeta into the next phase of growth. Berger and Hutcheson joined Kymeta in May of 2019 and began their co-CEO duties effective September 1, 2021.

Khalid bin Ahmed Balkheyour, CEO of Arabsat Resigns, Dr. Badr Al-Suwaidan, Chief Technical Officer, to head up Arabsat

September 6, 2021 - The Arab Satellite Communications Corporation (Arabsat) announced, during the Board of Directors Meeting on Wednesday 25th August 2021 the selection of H.E Eng. Haitham Al-Ohali, Vice Minister at Ministry of Communications and Information Technology in the Kingdom of Saudi Arabia as the new Chairman of Arabsat Board of Directors, accepting the resignation of CEO Eng. Khalid bin Ahmed Balkheyour and assigning Dr. Badr bin Nasser Al-Suwaidan, Chief Technical Officer, to head the Organization. Before joining Arabsat, Dr. Badr Al-Suwaidan worked as a supervisor of the Institute of Research and Space in King Abdulaziz City for Science and Technology in Saudi Arabia and participated in several programs and space missions, including working on the first Saudi Geo-orbiting satellite SG1 in cooperation with Arabsat, and the Saudi satellite “Sat 4” in cooperation with the US Space Agency NASA.

Jussi Tolvanen Becomes New CEO of Telenor Subsidiary DNA

September 3, 2021 - Effective from 11 October 2021, Tolvanen will head Telenor Group’s Finnish subsidiary DNA. The company’s current CEO, Jukka Leinonen, will take on the role as Head of Telenor Group’s Nordic Cluster full-time. Leinonen continues his role in Telenor Group’s Executive Management. Jussi Tolvanen, who currently holds the role of Managing Director at Microsoft Oy, will commence as CEO of DNA on 11 October 2021. He also has previous experience as CEO of Avanade Finland and in various management positions at Fujitsu and Hewlett-Packard. He holds a Master of Economics from the University of Vaasa.

REPORTS

NSR’s Non-GEO Constellations Analysis Toolkit 2.0 Doubles Its Data Capabilities

September 27, 2021 - NSR launched Version 2.0 of its industry leading *Non-GEO Constellations Analysis Toolkit 2.0 (NCAT2)*, expanding its comprehensive analytical toolset benchmarking LEO and MEO constellations. Version 2.0 doubles input and output data tables to 56 sub-constellations and increases available tools to 15, including a granular assessment of fixed-data and mobility applications. As thousands of LEO and MEO satellites beam tens of Terabits per second, they transform not only the space sector, but the adjacent telecommunications industry, making it vital for strategic decision makers of both value chains to evaluate potential developments. NCAT2’s configurable filters and visualizations allow that insight.

NGSO Constellations Continue to Gain Momentum, Satellite Connectivity & Video Market Expected to Double Over Next Decade

September 22, 2021 - In its flagship report on the *Satellite Connectivity and Video Market*, leading international consulting and market intelligence firm, Euroconsult projects the market value to double between 2020 to 2030. Driven primarily by non-geostationary orbit (NGSO) satellite constellations, by

2030, the satellite connectivity and video market is projected to exceed \$20 billion. NGSO capacity accounts for more than 75 percent of the projected market growth in the next decade. The increasing dominance of NGSO satellites is also reflected in the supply forecast, with NGSO accounting for ~90 percent of total supply to be added in the next five years. The total global capacity supply (including all orbits) will rapidly expand from 3.7 Tbps in 2020 to 23 Tbps in 2022 and is projected to reach more than 50 Tbps in 2026, as additional constellations enter into service.

Global Industry Accelerating IoT Adoption in Response to Covid-19, Inmarsat Research Reveals

September 22, 2021 - New research by Inmarsat reveals a rapid increase in the maturity level of organisations adopting the industrial Internet of Things (IoT) since the start of the Covid-19 pandemic. Respondents drawn from multiple industries also reported that Covid-19 has demonstrated the importance of IoT to their businesses, with many accelerating IoT deployments in response to the pandemic. According to the research, IoT adoption has seen huge progress from 2020 to 2021. More than three quarters (77 percent) of the organisations surveyed have now fully deployed at least one IoT project, with 41 percent having achieved this in the twelve-month period from the second quarter of 2020. Of the remaining 23 percent of respondents that have not yet fully deployed IoT projects, all are either currently trialling it, or plan to deploy or trial at least one IoT project in the next 18 months.

New WTA Report: Smarter Selling in a Virtual World

September 15, 2021 - Teleport operators and technology companies had to quickly design, develop and launch new products and services that would allow their customers to survey, control and troubleshoot their systems remotely. They include tools to automate onsite tasks and provide data points in real time to aid with troubleshooting and problem diagnosis as well as collaboration applications that allow for swifter communication and more sales opportunities during the pandemic. In this report, WTA explores how service providers and technology companies created innovative products to help their customers weather the pandemic. It delves into how such companies developed strategies to maintain their client base and reach new audiences and honed their own internal processes to ensure employees and clients alike were taken care of during COVID-19 and beyond.

Emerging Quantum Communications via Satellite Revenue Opportunity of \$2.6 Billion by 2030

September 14, 2021 - NSR's *Quantum Communications via Satellite (QCvS) Report* finds the potential to deliver unlimited security boosting satellite-based quantum communications to a revenue opportunity of \$2.6 Billion by 2030 with Banking, Energy, and Gov/ Mil as the primary target markets for services adoption. The segment is surpassing expectations, with global investments of \$20 billion in quantum related technologies. Leveraging optical/laser terminals advancement towards its own growth, increased Optical adoption positions QCvS for take-off. With government support, full commercialization is expected by decade's end.

UPCOMING EVENTS

APSCC 2021 Webinar Series, Virtual Event, <https://apscsat.com>

LIVE Every Tuesday 9AM HK | Singapore Time

2021 Joint Conference on Satellite Communications (JS-SAT 2021), October 7-8, Pusan, Korea & Online, <http://www.kosst.or.kr/IC-SAT2021>

NAB Show, October 9-13, Las Vegas, USA, <https://nabshow.com/2021/>

International Astronautical Congress, October 25-29, Dubai, UAE, <http://www.iafastro.org/events/iac/iac-2021/>

CABSAT 2021, October 26-28, Dubai, UAE, <https://www.cabsat.com/>

Global MilSatCom, November 2-4, London, UK, <http://www.globalmilsatcom.com>

Asia Video Summit 2021, November 1-12 | 16-18, <https://asiavideosummit.com/>

Satellite Industry Forum, November 18, <https://avia.org/>



COSPAR Symposium, November 15-19, Singapore, <https://www.cospar-assembly.org>

World Satellite Business Week, December 13-16, Paris & Online, <http://www.satellite-business.com>

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@apscc.or.kr Website: www.apscc.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.apscc.or.kr.