

APSCC Monthly e-Newsletter

August 2022

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 July 1 to July 31.

INSIDE APSCC

APSCC 2022 Satellite Conference & Exhibition (APSCC 2022), October 18-20, the-K Hotel Seoul, Korea www.apccsat.com

Registration is now OPEN! REUNITING SPACE IN ASIA! APSCC ANNUAL EVENT is BACK IN PERSON
APSCC Satellite Conference and Exhibition, the largest three-day annual gathering of the Asia Pacific satellite community, is the defining platform that brings the professionals of the satellite and space industry together for market insight, striking partnerships and concluding business deals. APSCC is excited to gather again and provide various types of live events in person! Reconnect, communicate, and collaborate on the industry's challenges and opportunities that lie ahead to improve the quality of life in the Asia-Pacific region through Satellite and Space. Regarding sponsorship, exhibition and speaking opportunity, please contact the APSCC 2022 team at apsc2022@apsc.or.kr

SATELLITE BUSINESS

SES and AXESS Networks to Enable Smart Mining with O3b mPOWER

July 28, 2022 – SES and AXESS Networks are accelerating digital transition of the mining industry with SES's second-generation medium earth orbit (MEO) system O3b mPOWER, the two companies announced today. Under this multi-year, multi-million agreement, the mining sector users will be able to benefit from the cutting-edge low-latency Onshore Energy & Mining mPOWERED connectivity service. SES's Onshore Energy & Mining mPOWERED service will provide the highest throughput available from a satellite system and deliver dedicated and carrier-grade networks to AXESS' customers reliably regardless of their remote locations. O3b mPOWER can deliver up to multiple gigabits per second per site, enabling AXESS' customers to accelerate the digitalisation of their operations and sites globally, boosting profitability through access to new applications and efficiency, as well as improving staff safety and welfare. SES's second-generation MEO connectivity service also brings the Cloud closer to the end customers and can enable edge computing to support the use of 5G and IoT in the mining industry.

Nokia Radio Technology to Enable AST SpaceMobile's Direct-to-cell Phone Connectivity from Space

July 28, 2022 – AST SpaceMobile, Inc. that they have signed a five-year 5G deal with Nokia. Under the deal, Nokia and AST SpaceMobile will work to achieve their joint ambition to expand universal coverage and connect underserved communities around the world. The planned launch of AST SpaceMobile's BlueWalker 3 test satellite later this year will kick off global testing with mobile network operators on six continents. AST SpaceMobile's mission is to eliminate the connectivity gaps faced by over five billion mobile subscribers worldwide and to bring cellular broadband to approximately half of the world's population who remain unconnected. Their approach will mean that subscribers outside the reach of cellular coverage could have access to broadband speeds without having to invest in specialized hardware and be able to roam from land networks to space networks for the first time. Through its mobile network operator relationships, AST SpaceMobile has entered into agreements and understandings with mobile network operators which collectively

service over 1.8 billion cellular customers.

Tactical Wireless Joins Inmarsat's Elevate Programme

July 27, 2022 – Tactical Wireless has joined Inmarsat's ELEVATE, a development programme, ecosystem and marketplace for providers of software, hardware and solutions, and original equipment manufacturers (OEMs) in commercial land markets. As a member of the ELEVATE programme, Tactical Wireless will provide customers with even more reliable, personalised communications solutions based on their individual bandwidth requirements and location. Access to ELERA, the leading global L-band satellite connectivity network from Inmarsat will enhance Tactical Wireless' ability to meet customers' niche and vital needs, whatever and wherever they may be. Tactical Wireless is a UK-based company which has specialised in integrating innovative solutions for hybrid communications in remote or poorly connected areas since it developed its universal sensor and communications hub, Omni-Hub®, in 2013. The company offers bespoke communications technologies and services across a variety of industries.

INTEGRASYS Solutions for Government Applications in 2021 EDF Proposals: NAUCRATES and RFSHIELD

July 27, 2022 – The European Commission is supporting R&D projects through the program European Defence Fund (EDF) 2021, with almost €1.2 billion for Defence and R&D projects. INTEGRASYS has been selected as one of the companies for obtaining multiple EDF programs, and two projects, thanks to its defence expertise acquired over the years. INTEGRASYS will be coordinating RFSHIELD "RF Interference Removal for Military Services based on Spaces Link". The project will take up to 30 months, until June 2025. RFSHIELD will ensure the protection of the SatCom services from intentional and non-intentional interferences, increasing the availability and performance of COMSATCOM/MILSATCOM services for military users. The reason why INTEGRASYS has been designated as coordinator is due to the current expertise that the company has in Interference Removal solutions, with its available CLEANRF product. The consortium of the project is formed by 5 companies, AICOX, MBS, and INGSPACE as INTEGRASYS' partners, who are also specialized in defence capabilities. The company has also been awarded NAUCRATES project, which is focused on microsatellites for Geostationary Orbit Surveillance and Intelligence. The project duration will be until December 2025, and the main goal is to design and demonstrate a microsatellite with less than 100kg mass, positioned in a stable orbit outside the GEO belt, as an in-orbit optical sensor with the capability to approach other objects in GEO to take centimetre level resolution images.

Astrocast Provides Soracom Customers Access to Global Satellite IoT Connectivity

July 27, 2022 – Astrocast, a leading global nanosatellite IoT network operator, and Soracom, a global provider of advanced IoT connectivity, announce today a partnership to embed the Astrocast Satellite IoT (SatIoT) solution into the Soracom platform. This collaboration enables Soracom to offer integrators and end customers blended IoT connectivity options that comprise satellite and cellular connectivity. Since 85% of the globe has zero cellular coverage, Astrocast's SatIoT solution will provide a key component to Soracom's 20,000 plus customers across the world; with devices in areas where cellular coverage does not reach. Organisations can access Astrocast SatIoT by subscribing to the Soracom platform, taking advantage of the seamless, secure integration to a choice of cloud services. They will be able to make use of Soracom's blended connectivity options or SatIoT alone.

Eutelsat and OneWeb Sign MOU to Combine

July 26, 2022 – Eutelsat Communications and key OneWeb shareholders have signed a Memorandum of Understanding with the objective of creating a leading global player in Connectivity through the combination of both companies in an all-share transaction. Eutelsat will combine its 36-strong fleet of GEO satellites with OneWeb's constellation of 648 Low Earth Orbit satellites, of which 428 are currently in orbit. The transaction would be structured as an exchange of OneWeb shares by its shareholders (other than Eutelsat) with new shares issued by Eutelsat, such that, at closing, Eutelsat would own 100% of OneWeb (excluding the 'Special Share' of the UK Government). OneWeb

shareholders would receive 230 million newly issued Eutelsat shares representing 50% of the enlarged share capital. The potential transaction builds on the deepening collaboration between Eutelsat and OneWeb, begun with the equity stake acquired by Eutelsat in OneWeb in April 2021, the global distribution agreement between Eutelsat and OneWeb announced in March 2022, and the new exclusive commercial partnership, addressing mainly the European and global cruise markets, signed today.

SES to Power Innovative, Immersive Experiences Onboard Leading Family Cruise Lines Fleet with O3b mPOWER

July 26, 2022 – SES will be providing ground-breaking high-speed satellite-based connectivity services to the newest landmark ship of a leading family cruise line, the company announced today. The cruise line existing fleet will also transition its connectivity to SES’s second-generation medium earth orbit (MEO) system O3b mPOWER, alongside installing the service onto its newbuild programme. The high-performance connectivity service onboard will first be available via SES’s O3b Medium Earth Orbit (MEO) constellation and will subsequently migrate and expand to SES’s O3b mPOWER communication system. This connectivity will be augmented by SES’s geostationary satellite fleet and ground-based infrastructure to provide high-bandwidth redundancy and unparalleled reliability throughout the voyage. The new agreement will help enable a seamless and hassle-free internet connectivity experience for guests who can unwind in complete luxury without worrying about their family’s consuming large amounts of data at considerable expense. Passengers can purchase new Unlimited Internet access plans by leveraging SES’s O3b mPOWER network and enjoy unmatched connectivity whilst cruising.

Gilat and Intelsat Expand Their Strategic In-Flight Connectivity Partnership in Japan

July 25, 2022 – Gilat Satellite Networks Ltd., a worldwide leader in satellite networking technology, solutions, and services, announced today that the Company is further expanding its strategic in-flight connectivity (IFC) partnership in Japan with Intelsat. Intelsat is augmenting its commercial and business aviation services in Japan to support even higher levels of IFC reliability for air travelers by expanding the network with two additional SkyEdge II-c hubs. Gilat’s SkyEdge II-c is a proven operational system that allows aviation service providers like Intelsat to streamline service fulfillment and provide a superior user experience to airline passengers.

MEASAT-3d Enters Commercial Service

July 22, 2022 – Following the launch of MEASAT-3d on 22 June 2022 from Kourou, French Guiana, MEASAT Global Berhad (“MEASAT”), Malaysia’s premier satellite operator, has successfully completed in-orbit testing for the MEASAT-3d satellite today, ahead of schedule. MEASAT-3d, the company’s latest and most advanced satellite has now entered commercial service, after its handover by Airbus Defence and Space. MEASAT-3d, a multi-mission satellite with a planned lifespan of more than 18 years, carries C-band and Ku-band payloads for video and Direct-to-Home (DTH) services and a high-throughput multiple spot beam Ka-band payload optimized to deliver high-speed broadband internet communications for Malaysia; even for users in the most remote areas of the country. The satellite also hosts a Q/V band payload, the first of its kind in the Asia Pacific region, allowing MEASAT to study radio frequency propagation effects in high rainfall regions like Malaysia, to enable the design of its next generation satellites. In addition, MEASAT-3d also carries an innovative hosted payload for KTSAT which will be used for the Korean Augmentation Satellite System (KASS) to enhance accuracy and reliability of GPS signals for airplanes, increasing airline flight safety in South Korea. MEASAT-3d is co-located with MEASAT-3a and MEASAT-3b at the 91.5°E orbital slot – MEASAT’s key video neighbourhood, to form one of the region’s most powerful and robust orbital locations with unrivalled in-orbit redundancy and expansion capacity.

WARPSPACE Chooses AWS for Operation of Optical Inter-Satellite Data Relay Constellation in MEO

July 21, 2022 – WARPSPACE is using Amazon Web Services (AWS) for secure, elastic and cost-

effective operation on the upcoming Optical Inter-Satellite Data Relay Constellation in MEO. By leveraging AWS, WARPSPACE will be able to provide a secured-communication infrastructure and more focus on delivering value to its global customers. The primary mission of WARPSPACE is to provide a communications link that connects customers' satellites with ground systems. To do this, WARPSPACE is developing "WarpHub InterSat", an End-to-End optical inter-satellite data relay communication service for Earth observation satellite operators. Three data relay satellites equipped with the optical terminal will be launched in Medium Earth Orbit (MEO) to be able to cover the whole Low Earth Orbit (LEO). Through this network, Earth observation satellites can downlink their data at high data rates in near real-time 24/7 at high-data throughput (End-to-End one gigabyte). WARPSPACE uses AWS managed services like Amazon Elastic Kubernetes Service (EKS) and Amazon Aurora to help develop workloads critical for WarpHub InterSat operation. Examples include mission control, orbit coordination, and low-latency, low-cost delivery of remote sensing data from customers' satellites to their ground systems.

Hanwha Systems, Hanwha Defense Australia and OneWeb Sign a MoU to Explore the Provision of Satellite Connectivity Services to the Australian Defense Market

July 20, 2022 – Hanwha Systems Corporation (HSC) and Hanwha Defense Australia (HDA), Korea's two leading defense companies, have signed a Memorandum of Understanding (MOU) with OneWeb to explore the joint provision of connectivity services to the Australian Defence Market. At Farnborough International Airshow site in the UK, Hanwha Systems announced that the company had signed a three-party MoU with Hanwha Defense Australia and OneWeb to discuss their potential participation in "Australian Military Satellite Internet Business." The MOU will facilitate discussions between the three companies regarding how they may combine their key capabilities to meet competitive requirements for Australian Military Satellite Tactical Internet Program.

ARSAT Will Use SES-17 to Expand Satellite Broadband Connectivity in Argentina

July 20, 2022 – ARSAT, Argentina's leading telecommunications company, will take advantage of SES's recently launched high performance geostationary (GEO) satellite, SES-17, to deliver high-quality connectivity services. "We want to reach all areas of the country," SES and ARSAT announced today. The multi-year agreement will allow ARSAT to provide reliable broadband satellite services starting in mid-2022. By leveraging the capacity of SES-17, ARSAT will improve access to affordable and high-quality satellite broadband services for business and residential applications. In addition, ARSAT will use SES-17 to accelerate internet connectivity in public schools throughout the country in the framework of an agreement signed with the Ministry of Education. Operating at 67 degrees West, SES-17 is the only high-performance Ka-band satellite currently operating in the Americas region with full coverage over the Argentine mainland. The satellite's 200 fully flexible beams also make it ideal for bringing quality connectivity services across underserved communities across the country.

Kacific's Investment in Innovation Recognised at the Asia-Pacific Stevie Awards 2022

July 19, 2022 – Kacific is honoured to be recognised for its commitment to innovation at this year's Asia-Pacific Stevie Awards. Award organisers have named Kacific as the gold award winner for Most Innovative Tech Start Up of the Year and Most Valuable Technical Innovation Award. Kacific has also been recognised as a silver award winner for Innovative Achievement in Sales or Revenue Generation. The Asia-Pacific Stevie Awards is a premier awards ceremony that celebrates the contributions of businesses and entrepreneurs across 29 Asia-Pacific nations. All award categories have a focus on innovation in all forms and aspects of business. Innovation is central to Kacific's values – implementing new initiatives in the sphere of broadband and internet connectivity to serve communities affected by the digital divide. Kacific has a vision of providing reliable and affordable satellite broadband services to underserving communities across the Pacific.

SES's O3b mPOWER Satellites to Provide Global High-Speed Connectivity to Explora Journeys

July 18, 2022 – SES announced that it will be providing global connectivity services to Explora

Journeys, debuting on EXPLORA I. Guests and crew will benefit from SES's best-in-class low latency, highest available throughput and global Cruise mPOWERED connectivity service. Explora Journeys, the new luxury lifestyle brand of the MSC Group, is redefining the ocean experience for a new generation of discerning luxury travelers. The brand's aspiration is to create a unique 'Ocean State of Mind' by connecting guests with the sea, with themselves, and with like-minded people, while remarkable itineraries will blend renowned destinations with lesser-travelled ports, for a journey that inspires discovery in all its forms. Today's announcement means that guests onboard the EXPLORA I will enjoy complementary, high-speed, reliable, and uninterrupted Wi-Fi, no matter how remote their location. Whether they are streaming their favorite content or sharing their onboard experience from any part of the ship. In addition, enhanced connectivity will improve crew welfare and training, employee performance, motivation, and retention. This connectivity is delivered by SES's upcoming second-generation medium earth orbit (MEO) system – O3b mPOWER – which operates around 8,000km above earth's surface, and SES's geostationary (GEO) fleet of satellites ensuring seamless connectivity, wherever and whenever.

SatixFy Introduces Compact Aero Terminal Providing In-flight Connectivity at High Speeds

July 18, 2022 – SatixFy announced plans to go public through a business combination with Endurance Acquisition Corp. introduced its advanced compact aero terminal – Onyx Aero. The terminal uses the company's latest multi-beam ESMA and SDR technology to connect to both LEO and GEO Ku-band satellite constellations simultaneously to provide in-flight connectivity at high data rate speeds. The terminal's slick design demonstrates low weight, low drag, and low footprint, which enables cost-effective operation and quick installation on commercial aircraft as well as on large business/corporate jets. At any given time, Onyx Aero simultaneously communicates with multiple GEO/MEO/LEO satellites, providing passengers with highly reliable broadband IFC.

Gilat Awarded Order of Over \$7M from Tier-1 Mobile Network Carrier in APAC for 4G Cellular Backhaul Network Expansion

July 14, 2022 – Gilat Satellite Networks Ltd., a worldwide leader in satellite networking technology, solutions, and services, announced today it received an order in excess of \$7 million from a Tier-1 mobile network carrier in the Asia Pacific (APAC) region for 4G cellular backhaul network expansion. Gilat's SkyEdge II-c Capricorn VSATs will be used for cellular backhaul over satellite, further propelling the growth of the mobile carrier's 4G/LTE network into rural zones lacking fiber access.

Virgin Atlantic Selects Viasat for In-Flight Connectivity on its New Airbus A330-900 Fleet

July 12, 2022 – Virgin Atlantic has selected Viasat's industry-leading in-flight connectivity (IFC) solution for its new Airbus A330-900 aircraft. Viasat's IFC system can enable high quality, full video streaming, browsing, messaging, social media scrolling and more to every connected device on the aircraft, operating with a level of connectivity made possible through the Company's robust satellite network capacity. The Viasat IFC equipment will be factory-installed ("linefit") on the 16 new Virgin Atlantic Airbus A330-900s at the Airbus Center of Excellence production site in Toulouse, France, ensuring in-flight internet service is available on each aircraft upon delivery. Virgin Atlantic's fleet of Airbus A330-900s is scheduled to enter service with intercontinental flights between the Americas and the United Kingdom in the second half of this year.

ST Engineering iDirect and MEASAT Reaffirm Partnership with Significant Network Expansion to Power Next Generation HTS Satellite

July 12, 2022 – ST Engineering iDirect announced today that Malaysian satellite operator MEASAT, is significantly expanding its iDirect Evolution-based satellite network to deliver a plethora of services to enterprises and communities located in rural and ultra-rural areas across Malaysia. MEASAT-3d, launched on June 22, 2022, will provide C, Ku and Ka-band HTS capacity so that users will be able to enjoy high-speed broadband regardless of their location within Malaysia. The contract was sealed in partnership with Datacom, a regional service integrator and long-term partner of ST Engineering

iDirect, that will carry out the upgrade, activation and support of the network. The Evolution platform already underpins MEASAT's network which serves thousands of remote sites across Malaysia, making it one of the largest globally deployed networks. This upgrade will now expand delivery of consumer and enterprise broadband services for farms and plantations, community Wi-Fi broadband for rural underserved regions, cellular backhaul to MNOs, government and soon, land and maritime mobility services. The Evolution platform supports MEASAT's true multiservice offerings.

Ericsson, Qualcomm and Thales to Take 5G into Space

July 11, 2022 – Ericsson, Thales, and Qualcomm Technologies, Inc. are planning to take 5G out of this world and across a network of Earth-orbiting satellites. After having each conducted detailed research, which included multiple studies and simulations, the parties plan to enter smartphone-use-case-focused testing and validation of 5G non-terrestrial networks (5G NTN). The result could effectively mean that a future 5G smartphone could use 5G connectivity anywhere on Earth and provide complete global coverage for wideband data services, including places normally only covered by legacy satellite phone systems with limited data connectivity capabilities. The benefits of 5G connectivity via low Earth Orbit (LEO) satellites are expected to include coverage in extreme geographies or remote areas across seas, oceans and other locations where terrestrial coverage is absent.

Mynaric Signs L3Harris as Strategic Investor and Intensifies Collaboration

July 6, 2022 – Mynaric and L3Harris signed agreements related to an investment in Mynaric by L3Harris and to future collaboration. With the strategic investment, the companies seek to build on their existing collaboration in the airborne domain and widen the scope to cover all domains including space, air, maritime and ground. Pursuant to the agreements, L3Harris will invest approximately EUR 11.2 million by means of a capital increase from authorized capital (under exclusion of subscription rights) and acquire 409,294 new bearer shares of Mynaric at a price of around EUR 27.37 per share. Following the capital increase, L3Harris will initially own 7.2% of Mynaric's total shares.

Inmarsat and hiSky Announce Successful Test Completion for New Cost-effective, High-value IoT Service Offering

July 5, 2022 – hiSky Ltd has completed compatibility testing of its Smartellite™ terminals with the highly sophisticated, award-winning and high-speed Global Xpress (GX) network from Inmarsat. The move marks the first step in a long-term partnership between the two companies, utilising Inmarsat's geostationary (GEO) Ka-band capabilities to provide a low-cost, high-value offering to hiSky's IoT customers. The technology will be available to customers active in enterprise sectors including agriculture, transport, mining, energy and utilities across selected territories. hiSky's proprietary Smartellite™ terminal technology has proven to communicate highly effectively with Inmarsat's GX network – with its high-speed and reliable signals being received by ground infrastructure in Scotland and transferring throughout hiSky's IoT network offering. This service enables the successful running of IoT devices, as well as voice calls and messaging for both mobile and static enterprise assets. Through the partnership, hiSky and Inmarsat have uncovered an opportunity to leverage Inmarsat's expansive GX network to provide customers with access to the world's most sophisticated GEO global Ka-band satellite network, typically used by leading companies in the aviation and maritime industries. hiSky's network is designed to operate within existing satellite networks, enabling fast deployment at minimum CAPEX cost.

SatixFy Technology Enables First 5G Link through a LEO Constellation

July 5, 2022 – SatixFy Communications Ltd. announced its critical role in enabling the first ever demonstration of a high-speed, low-latency link with a LEO satellite constellation incorporating 5G (video available here). SatixFy has partnered with OneWeb under the ESA Sunrise Partnership Project, with support from the UK Space Agency, to develop a compact electronically steered multi-beam

array suitable for mobility services over both LEO and GEO satellites simultaneously. The terminal can also be integrated into 5G equipment to allow end-to-end access to a LEO constellation network via a 5G signal. On June 28, 2022, a demonstration at the ESA/ECSAT facilities in Harwell achieved the world's first ever 5G backhaul communications connected to a LEO satellite constellation, using a compact electronic antenna powered by SatixFy to connect to a LEO satellite constellation operated by OneWeb. The demonstration involved a super compact satellite terminal mounted on a car. The user terminal antenna performed several satellite and beam handovers, along with frequency hopping over the OneWeb LEO network at 1,200 km, while maintaining a simultaneous and continuous link with a GEO satellite at an altitude of 36,000 Km. Live 4K UHD TV video and audio streaming took place from the GEO satellite.

Teleglobal and Kacific Complete Large-Scale Deployment of Mobile Backhaul Services

July 4, 2022 - Kacific Broadband Satellites Group (Kacific) has successfully partnered with PT Indo Pratama Teleglobal ("Teleglobal") in Indonesia to provide a large-scale deployment of mobile backhaul services to major telecommunications operators. Over the last year, the pair have connected hundreds of base sites across the Indonesian territory, capable of 4G services, to Kacific's high-throughput Ka-band satellite. The huge thirst for mobile backhaul services is driven by the Government's goal of connecting the 3T (front, outermost, disadvantaged) areas of Indonesia, with major telcos tendered from the Ministry of Communication and Information (Kemenkominfo) together with the Telecommunications and Information Accessibility Agency (BAKTI) to deploy close to 8,000 base stations by the end of 2022. Kacific offers Teleglobal the flexibility to shift capacity in different beams and deploy capacity based on requirement with different networks. Speeds of up to 85Mbps can be achieved on the small Kacific VSAT terminals that integrate into the telco's mobile network.

OneWeb Granted Landing Rights License in Brazil

July 4, 2022 – OneWeb has received approval from Brazil's telecommunications regulator for a satellite Landing Rights license in the country. Agência Nacional de Telecomunicações (Anatel) has granted a 15-year license for OneWeb's cutting-edge satellite technology to address the connectivity needs of thousands of Brazilian and international businesses. This license will also enable OneWeb to support the Brazilian government's efforts to extend digital infrastructure across the country and is an important milestone for the company to deliver its connectivity solutions across South America. Brazil is one of the few countries that will host two OneWeb satellite gateways (in Petrolina and Maricá). These gateways, which demonstrate OneWeb's commitment and long-term investment in Brazil, will be used to extend the connectivity footprint from the country to all of South America and the Caribbean.

BROADCAST

HISPASAT Peru Unites Streaming and DTH Service Delivery with Harmonic Cloud Platform

July 26, 2022 – Harmonic announced that satellite operator HISPASAT Peru is using Harmonic's cloud-native platform to power white-label streaming and robust direct-to-home (DTH) broadcast services. Harmonic's VOS®-based solution streamlines media processing, delivery and maintenance, enabling the operator to launch new channels quickly, with exceptional reliability. HISPASAT Peru's white-label streaming service enables pay-TV operators, internet service providers and regional content companies to offer world-class entertainment without needing a separate infrastructure. Harmonic's cloud-native VOS solution simplifies all stages of media processing — including transcoding, packaging and origin — and delivery for the operator's streaming service. Integrated with the NAGRA OpenTV Video Platform, which includes tools for content aggregation and management, multi-DRM capabilities and allows for an enhanced UX, the end-to-end solution provides HISPASAT Peru with unparalleled agility, resiliency, security and scalability to enable a superior streaming experience for subscribers. Harmonic's VOS solution, with more than 20 statmux pools and transcoding and

scrambling capabilities, also ensures efficient satellite broadcast service delivery with outstanding quality for HISPASAT Peru's DTH services.

LAUNCH / SPACE

Thales Alenia Space and MIPRONS Team Up to Develop a Water-Powered Satellite Propulsion System

July 26, 2022 – Thales Alenia Space has signed an agreement with Italian startup MIPRONS to develop of a highly innovative propulsion system for satellites, using water as a fuel! Based on MIPRONS' proprietary technology, with the Italian patent being extended to 49 other countries, this miniaturized, high-thrust thruster will use a very green, cost-effective propellant – water! An electrolysis process breaks down the water into hydrogen and oxygen, which are fed into the combustion chamber. Only loading water, the system would allow for faster maneuver times such as orbit-raising, de-orbiting and collision avoidance. Because the system is both compact and scalable, it can be used on all size satellites, from small to large. The innovative MIPRONS concept also calls on 3D printing for a number of components. Purposed-designed for Thales Alenia Space's satellites, this powerful and high-efficiency thruster will feature reduced weight and volume. Thales Alenia Space will guide thruster development to achieve a reliable, high-performance propulsion solution for small and medium satellites. Thales Alenia Space in Italy will support the environmental testing of the engineering model.

Thales Alenia Space and QinetiQ Pave Way for Small Multimission Satellites in Very Low Earth Orbit

July 19, 2022 – Thales Alenia Space and QinetiQ have signed a study contract with the European Space Agency to pave the way for small multi-mission satellites to operate in Very Low Earth Orbit (VLEO). The Phase A/B1 study will advance the design of Skimsat demonstrator, a VLEO multi-mission (<300km) satellite that aims to significantly reduce the cost of Earth observation whilst increasing performance by operating at substantially lower altitudes. The highly modular, compact flexible satellite will capitalize on developments in high efficiency electrical propulsion to compensate for air drag. The compact size of Skimsat will allow to be compatible with the launchers designed for small satellites with respect to dimensions, such as those currently being developed in the UK, to provide customers with substantially shorter lead times than traditional satellite launchers of similar capability. The study is being led by Thales Alenia Space in the UK and QinetiQ Space team in Belgium and is funded under ESA's Discovery Preparation and Technology Development (DPTD) activities. Payloads using the multi-mission Skimsat platform will be identified as part of the study for an In Orbit Demonstration to show applications in VLEO prior to the first commercial mission. This new initiative is fully included in the new space approach of Thales Alenia Space and reflects the company's capability to address disruptive needs in partnership with smaller companies.

Sidus Space Expands Relationship and Increases Deliverables to Teledyne Technologies

July 19, 2022 – Sidus Space, Inc., a Space-as-a-Service satellite company focused on mission critical hardware manufacturing; multi-disciplinary engineering services; satellite design, production, launch planning, mission operations; and in-orbit support, is pleased to announce its growing relationship with Teledyne Marine, a part of Teledyne Technologies, Inc., following a noteworthy Q2 2022. The three-month period marks the strongest revenue quarter between the parties since their partnership began four years ago. As part of the increasing scope of work and revenue with Teledyne Marine, Sidus Space will now manufacture components for Teledyne Marine's Massachusetts facility and will continue supplying components to Teledyne Marine's facilities in Texas and Florida. Sidus Space signed its first two-year master supply agreement (MSA) with Teledyne Marine in July 2019, followed by a two-year product pricing agreement (PPA) in September 2021.

Following the Success of the Inaugural Flight, Arianespace to Start Operations of Vega C with Seven Launchers Already Sold

July 13, 2022 – Following the success of its inaugural flight, Vega C will now begin its operational phase, under the responsibility of Arianespace, with a target of at least four launches per year and a fast-growing backlog that already includes 7 launches and 10 auxiliary payloads. Vega C is an upgrade to the Vega launcher and can better answer institutional and commercial customers' needs. Thanks to its increased capabilities, Vega C will serve the burgeoning Earth observation market as well as long-term institutional and commercial needs. The first commercial launch of Vega C is scheduled in November 2022. The flight, designated VV22, will deliver Pléiades Neo 5 and 6, a pair of satellites wholly funded, manufactured and operated by Airbus.

Rocket Lab Introduces Responsive Space Program

July 6, 2022 – Rocket Lab USA, Inc. has announced it is introducing a Responsive Space Program designed to on-ramp commercial and government satellite operators to the Company's 24/7 rapid call-up launch capability and streamlined satellite build and operation options. Through the Responsive Space Program, Rocket Lab works directly with satellite operators to understand their mission requirements, which may be dedicated rapid call-up launch, satellite design, build and integration, spacecraft operations, or all of the above. Once details including reference orbits, payload and integration specifications are confirmed, Rocket Lab develops a tailored responsive mission plan for each customer. From that point on, Rocket Lab remains in a state of readiness with rockets and satellites on standby, awaiting a notice from the customer to integrate and launch. From arrival at the launch site, payload integration, encapsulation and launch can be completed in as little as 24 hours.

Airbus to Provide 42 Satellite Platforms and Services to Northrop Grumman for the US Space Development Agency Program

July 5, 2022 – Airbus US Space & Defense, Inc., has been contracted to provide 42 satellite platforms as well as assembly, integration, and test (AIT), launch, and space vehicle commissioning support services to Northrop Grumman to satisfy the US Space Development Agency's (SDA) Tranche 1 Transport Layer prototype constellation (T1TL) award. The Transport Layer will serve as the backbone for SDA's National Defense Space Architecture by providing assured, resilient, low-latency military data and connectivity worldwide to a full range of defense applications. Supporting this vital effort underscores Airbus US's commitment to the continued expansion of its Florida facility and investment in the Space Coast in support of US Government and commercial space missions. Derived from the flight-proven ARROW platform, the Airbus US solution expands on its commoditized satellite bus design providing more power and a larger payload accommodation. This modular solution offers a scalable 300 – 500 kg bus for the Northrop Grumman payload and future US Government missions.

Kongsberg Enters into an Agreement to Acquire Smallsat Manufacturer Nanoavionics

July 5, 2022 – Kongsberg Defence & Aerospace has entered into an agreement to acquire Lithuanian smallsat mission integrator and bus manufacturer NanoAvionics. The planned acquisition expands KONGSBERG's space offering to also have products and technology for manufacturing small satellites. KONGSBERG will acquire in total 77 per cent of the company. Current majority owner AST & Science will divest all its shares, while the management of NanoAvionics will retain 23 per cent of the company. The parties have agreed upon an enterprise value of EUR 65 million (100 per cent basis). Management and leadership structure of NanoAvionics under CEO Vytenis Buzas and CCO Linas Sargautis, both founders of the company, will remain unchanged. KONGSBERG and NanoAvionics plan to close the transaction following the conclusion of customary closing conditions including any required regulatory reviews. The two companies have complementary technology and positions in the space value chain. NanoAvionics is a leader in the Smallsat segment as a mission integrator and bus manufacturer, whilst KONGSBERG is an established provider of spacecraft subsystems, and through Kongsberg Satellite Services the world-leading supplier of satellite ground stations for downloading and processing satellite data.

Sidus Space Celebrates the Space-Qualification of Dhruva Space'S Satellite Orbital Deployer

July 5, 2022 – Sidus Space, Inc., a Space-as-a-Service company focused on mission critical hardware manufacturing; multi-disciplinary engineering services; satellite design, production, launch planning, mission operations; and in-orbit support is proud to announce that Dhruva Space's Satellite Orbital Deployer successfully achieved space-qualification on June 30. Dhruva Space's Satellite Orbital Deployer has been successfully tested and space-qualified in the PSLV C53 mission. By achieving space qualification, the Deployer has proven that it can withstand and operate properly in the harsh environment of space, a necessary and critical milestone. The launch took place at 18:02 IST on June 30, 2022, from the Satish Dhawan Space Centre (SDSC) at Sriharikota, Andhra Pradesh, India.

ArianeGroup Selected for Two European Commission Calls for Projects to Speed up the Development of Europe's First Reusable and Eco-friendly Launchers

July 4, 2022 – Following the call for projects issued by the European Commission as part of its Horizon Europe program designed to encourage and accelerate innovation, ArianeGroup has been given responsibility for two particularly ambitious projects to speed up the development of reusable, eco-friendly European launchers. ArianeGroup will be heading the SALTO and ENLIGHTEN projects, bringing together numerous academic and industrial partners, including innovative start-ups. The SALTO (reusable strategic space Launcher Technologies & Operations) project will test vertical landing by a reusable launcher stage prototype within the next two years, with a budget of 39 million euros. SALTO aims in particular to validate the landing phase, which is essential for launcher recovery. ENLIGHTEN (European Initiative for Low cost, Innovative & Green High Thrust Engine) is designed to develop and test advanced production and deployment technologies for reusable rocket engines, following on from the Prometheus program. The project has a budget of 17.4 million euros. ENLIGHTEN will strengthen the new propulsion system initiatives that ESA has entrusted to ArianeGroup in order to create a family of reusable, high-power engines using bio-methane or green hydrogen. These engines will power Europe's future family of reusable, eco-friendly launchers.

Rocket Lab Moon Mission for NASA a Success

July 4, 2022 – Rocket Lab USA, Inc., a leading launch and space systems company, today announced it has successfully deployed a pathfinding satellite for NASA, setting it on a course to the Moon. The deployment marks the successful completion of Rocket Lab's first deep space mission, paving the way for the Company's upcoming interplanetary missions to Mars and Venus. Owned and operated by Advanced Space on behalf of NASA, the Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment (CAPSTONE) will be the first spacecraft to test the Near Rectilinear Halo Orbit (NRHO) around the Moon. This is the same orbit intended for NASA's Gateway, a Moon-orbiting outpost that will provide essential support for long-term astronaut lunar missions as part of the Artemis program.

EXECUTIVE MOVES

Comtech Names Ken Peterman Chairman of the Board

July 25, 2022 – Comtech Telecommunications Corp. announced today that it has elected current independent director Ken Peterman as Chairman of the Board, effective July 22, 2022. Mr. Peterman will succeed Fred Kornberg, who is retiring as Chairman. Mr. Kornberg will also not stand for re-election to the Board and will step down as a director immediately preceding the next annual shareholder meeting. Mr. Peterman joined the Comtech Board in May 2022, following an accomplished career that spanned over forty years in the defense sector, earning credentials across a wide array of markets and both commercial and government satellite systems at companies, including Viasat, ITT/Exelis, Collins Aerospace, Raytheon and SpyGlass Group.

Bob Roe to Retire as OneWeb Technologies' Chief Executive Officer

July 20, 2022 – OneWeb Technologies has announced today that its long-time Chief Executive Officer, Bob Roe, plans to retire. Mr. Roe joined OneWeb Technologies as Chief Executive Officer in March 2012, then TrustComm, Inc. His leadership and deep understanding of the market helped grow TrustComm, Inc. into a trusted satellite communications solutions provider to the U.S. government and commercial enterprise customers. Under Roe’s guidance, the company has grown operationally and financially, culminating with its acquisition by global Low Earth Orbit (LEO) SATCOM provider, OneWeb. Since the acquisition, Roe and his management team have successfully positioned the company as an innovator that is now better equipped to serve its customers through access to OneWeb’s services and network. Mr. Roe’s transition is being coordinated closely with the Board of the Directors and is expected to be finalized this summer.

neXat Appoints New President Alexander Oudendijk to Lead the ‘Network of Satellite Networks’

July 19, 2022 – Former SES ASTRA CCO Alexander Oudendijk will join neXat, the world’s first satellite capacity aggregation platform, as its new president as the company builds on the momentum of its rebranding and offers internet services through its ‘Network of satellite networks’. Oudendijk brings more than 30 years’ experience in the satellite industry, including more than eight years as Chief Commercial Officer at SES ASTRA. Prior to that Oudendijk was Managing Director at Hughes Network Systems Europe.

Speedcast Further Strengthens Software Networking Expertise with the Announcement of New Board Member

July 13, 2022 — Speedcast, a leading global communications and network service provider, today announced the appointment of Andres Angelani to its Board of Directors. The board addition is part of Speedcast’s continued focus on software-defined network solutions across the energy, enterprise, and commercial and passenger maritime markets it serves. With a background in software and product development, Angelani currently serves as Global Head of the Digital Engineering Practice at Cognizant, a company that helps clients modernize technology so they can stay ahead in the fast-changing world. He joins the Speedcast Board with more than twenty years of experience in product engineering, technology, software, and research and development roles at Cognizant, Softvision, Globant and Synthesis Information Technology.

Terran Orbital Appoints Jonathan Siegmann as Senior Vice President Of Corporate Development

July 11, 2022 – Terran Orbital Corporation, a global leader in satellite solutions, primarily serving the United States and Allied aerospace and defense industries, has announced the appointment of Jonathan Siegmann as Senior Vice President of Corporate Development. Siegmann will lead Terran Orbital’s investor relations, M&A, and venture efforts among other development initiatives. Most recently, Siegmann served as Research Analyst and Portfolio Manager for Fidelity Management and Research Company. Coverage responsibilities included all North American aerospace, defense, and new space companies both public and private. Prior to Fidelity, Jonathan held various positions of increasing responsibility at BASF Corporation from 1998-2007.

Measat Appointments Ganendra Selvaraj as CCO and Jeevan Rao as Associate Vice President

July 8, 2022 – MEASAT Satellite Systems Sdn. Bhd. announced the following appointments: Ganendra Selvaraj: Chief Commercial Officer and Jeevan Rao: Associate Vice President - Network Engineering & Operations. Ganendra first joined MEASAT in 2004 and holds a Bachelor of Science in Aerospace Engineering from the University of Kansas. With close to 20 years of experience in the Telecommunications industry, Ganendra has performed a broad spectrum of technical and commercial roles within MEASAT leading up to this appointment. In his new role, Ganendra will oversee MEASAT’s Sales, Customer Engineering, Business Development and Corporate Communications functions. As a member of the MEASAT’s Executive Committee, he will focus on building the MEASAT customer base and expanding its commercial activities in support of the MEASAT Group’s long-term strategy. Jeevan has been with MEASAT since 2008 and holds a Bachelor

of Engineering in Electrical Engineering (Mechatronics) from University Technology Malaysia and Master of Science in Communications & Network Engineering from University Putra Malaysia. With close to 25 years of experience in satellite communications, broadcast and telecommunications industry, he brings experience in both space and ground segments; video broadcasting and DTH; VSAT and cellular backhaul networks. In his new role, Jeevan will oversee MEASAT's Service Delivery, Network Management Centre, Remote Site Support, System Development and Information Technology departments

SSC Appoints Nick Priborsky and Nathalie Fortier New Presidents of Satellite and Engineering Management

July 4, 2022 – SSC has appointed two new Presidents of divisions to be part of the company's executive committee. Nick Priborsky, currently the President of Engineering Services, will take over as new President of Satellite Management Services, SaMS. Meanwhile, long-time SSC colleague Nathalie Fortier replaces Nick as the President of Engineering Services, leaving her current role as the Head of Business Development. Both started their new positions from 1 July. Nick Priborsky has a long background as a space systems engineer. He has 22 years' experience within SSC, of which 7 years as a member of SSC's executive committee as the President of Engineering Services. Nathalie Fortier has a long background in space engineering. She has 20 years' experience within SSC where she's held several different roles, including Head of Finance & Business Control and Head of Business Development for Engineering Services.

REPORTS

NSR's Satellite Capacity Report Sees Industry Moving Past COVID-19 Contraction to Drive \$207B in Revenue Amidst Competition, Innovation and Risk-Taking

July 27, 2022 – NSR's *Global Satellite Capacity Supply & Demand, 19th Edition (GSCSD19)* takes a deep dive into an industry now past the COVID-19 contraction and in some areas, growing at a rapid pace. In revenue terms, the 2021 level of \$12.1 Billion will grow to \$30 Billion in 2031 representing a cumulative opportunity of \$207.3 Billion through the decade. Competition, innovation and risk-taking from all player types anchors a space economy currently at the beginning of a growth trajectory.

Guidance on Cyber-Risk Management Beyond IMO 2021 Compliance Offered in Inmarsat Report

July 20, 2022 – A new report published by Inmarsat, the world leader in global, mobile satellite communications, highlights the role of the International Maritime Organization's (IMO) 2021 cyber risk management code in providing a framework for cyber resilience but warns that there is more to combating attacks than compliance alone. Compiled by maritime innovation consultancy Thetius, *Beyond Compliance – Cyber Risk Management After IMO 2021* encourages proactivity in preventing and mitigating the impact of cyber-attacks.

NSR Releases Global Satellite Manufacturing and Launch Markets, 12th Edition

July 20, 2022 – NSR's *Global Satellite Manufacturing and Launch Markets, 12th Edition (GSMLM12)* offers a comprehensive assessment of the near- and long-term potential for satellite manufacturing and launch markets. Including satellites of all mass ranges, NSR's *Global Satellite Manufacturing and Launch Markets, 12th Edition (GSMLM12)* 10-year Global Market forecasts examine the Communications (including GEO & Non-GEO; Government & Military); Earth Observation; Science and Technology Development; Situational Awareness; Navigation; Crew & Cargo; and In-Orbit Servicing/Space Situational Awareness markets - creating a complete market picture for clients.

Inmarsat Report Finds Satellite Communications Fundamental to Aviation Decarbonisation

July 14, 2022 – The aviation industry is exploring a number of longer-term solutions to meet its commitment for net zero emissions by 2050, including a transition from fossil fuels. However, a new whitepaper by Inmarsat and award-winning aviation journalist Elan Head highlights that the number

of practical, immediately-viable options is limited to only two: either simply reduce flying or optimise the efficiency of flight operations.

Euroconsult Predicts One Ton of Smallsats to be Launched per Day on Average over the Next Decade

July 13, 2022 – The latest update of “*Prospects for the Small Satellite Market*” was released this week by Euroconsult, forecasting further growth in the global supply and demand of government, commercial and academic satellites weighing up to 500 kg. The market intelligence report, now in its 8th edition, anticipates that about 18,500 smallsats will be launched over 2022-2031, representing about 365 tons per year, i.e., one ton per day to be launched on average over the next ten years. However, the smallsat market presents a growing number of challenges such as high inflation, limited market addressability, difficult profitability, oversupply risk and concentration of the market by a handful of established players.

UPCOMING EVENTS

Korea in View, August 30, Seoul, Korea, https://avia.org/all_events/korea-in-view-30-aug-2022/

IBC 2021, September 9-12, Amsterdam, the Netherlands, www.ibc.org

World Satellite Business Week, September 12-16, Paris, France, <http://www.satellite-business.com/>

IAC 2022, September 18-22, Paris, France, <https://iac2022.org/>

Indonesia in View, October 6, Jakarta, Indonesia, https://avia.org/all_events/indonesia-in-view-6-october-2022/

Satellite Innovation 2022, October 11-12, Mountain View, CA, USA, <https://2022.satelliteinnovation.com/>

2022 Milsat Symposium, October 13-14, Mountain View, CA, USA, <https://2021.milsatshow.com/>

APSCC 2022 Satellite Conference & Exhibition (APSCC 2022), October 18-20, Seoul, Korea, <https://apscsat.com/>

Global MilSatCom, November 8-10, London, UK, <https://www.smi-online.co.uk/defence/uk/conference/global-milsatcom>

Asia-Pacific Regional Space Agency Forum (APRSF-28), November 15-18, Hanoi, Vietnam, <https://www.aprsaf.org/>

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About APSCC

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