APSCC Monthly e-Newsletter
JULY 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.apscc.or.kr. To unsubscribe, send an email to info@apscc.or.kr with a title "Unsubscribe."

News in this issue has been collected from June 1 to June 30.

INSIDE APSCC

APSCC 2022 Satellite Conference & Exhibition (APSCC 2022), October 18-20, Seoul, Korea
REUNITING SPACE IN ASIA! APSCC ANNAUL 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 apscc2022@apscc.or.kr

SATELLITE BUSINESS

Thailand Marine Department to Deploy Several Thousand Globalstar SPOT Gen4 Satellite Trackers via Thaicom to Safeguard Island Visitors
June 30, 2022 – Globalstar announces that SPOT Gen4 satellite messengers will be deployed by Thailand Marine Department to provide safety and security for all travellers on and around the island of Phuket. Phuket and surrounding islands typically welcome 20,000 visitors daily. As part of a major government programme to revitalise tourism, it is envisaged that several thousand SPOT Gen4 units will be deployed. A pilot deployment is already underway. The SPOT Gen4 devices are at the heart of the solution provided by Ship Expert Technology, a leading Globalstar Value Added Reseller partner dedicated to the maritime sector. The Thailand Marine Department is committed to help accelerate the recovery of the tourism industry which is so crucial to the country's economy.

Celcom-Digi Receives Regulatory Clearance to Move Forward with Merger in Malaysia
June 29, 2022 – Telenor Group's Malaysian subsidiary Digi.Com Berhad, and Axiata Group Berhad announced today that they have received a Notice of No Objection from the Malaysian Communications and Multimedia Commission (MCMC) on the proposed merger of Celcom and Digi's telco operations. With this notice the MCMC consents for the parties to advance to the next phase of the proposed transaction. The completion of the proposed transaction will now be subject to the approval of the Securities Commission, Bursa Malaysia, and by both Axiata and Digi shareholders. To ensure that consumers in Malaysia will continue to benefit from effective competition in the telecommunications sector, Axiata and Digi have offered an undertaking that they believe fully addresses preliminary issues identified by the MCMC. Details are available here. The merged company will provide better network quality and coverage. In addition, it will be primed to invest in network expansion, drive 5G solutions and catalyse new growth opportunities for large enterprises and SMEs. The merged company will also leverage combined economies of scale, while creating benefits through strengthening core distribution, delivering improved network operations, and realising efficiencies from operational activities.

ST Engineering iDirect Streamlines Site Installation Process for Intelsat FlexEnterprise Customers
June 28, 2022 – ST Engineering iDirect has enabled a simplified site installation solution for Intelsat's FlexEnterprise platform, reducing the amount of coordination required to quickly activate new sites. The Satmotion solution, developed by Integrasys, is now integrated into iDirect's Velocity platform which underpins the global FlexEnterprise service fabric to enable even faster deployment of connectivity services for enterprise locations practically anywhere in the world. This software-based solution eliminates the requirement for a separate communications channel and coordination between a central operations center and remote sites, making it faster and more cost-effective to deploy services. The capability will accelerate time-to-market for service providers and reduce time-to-deploy for individual sites, a critical need when establishing services to new areas.

First 5G End-to-End Link Recorded at ESA 5G Hub Using OneWeb Constellation
June 28, 2022 – OneWeb, together with the European Space Agency (ESA), SatixFy, and CGI, achieved a significant milestone after successfully demonstrating a high-speed, low-latency full 5G end-to-end link with OneWeb's LEO satellite constellation and the 5G/6G Hub at ESA / ECSAT's Harwell centre. Under the Sunrise Partnership Project, with support from the UK Space Agency, ESA and OneWeb have partnered with antenna technology provider SatixFy UK and 5G services provider CGI to develop its electronically steered arrays into the 5G user terminal, offering an extremely compact solution for mobility services. The Sunrise Partnership Project collaboration achieved a breakthrough performance on OneWeb's LEO network. This new super compact user terminal will undergo further testing to explore its full capabilities with LEO and GEO links for mobility services. After these tests are completed, the user terminal will be "fine-tuned' and optimised for different mobility use cases, targeting a low cost and effective system to provide OneWeb commercial services for land, maritime, and aviation markets.

Boeing Signs on for Aireon Space-Based ADS-B Data Services
June 23, 2022 – Aireon will deliver its flight data stream to Boeing. Boeing will use the stream to expand its advanced data analytics capabilities in its effort to further strengthen commercial air travel safety. Aireon will provide historical aircraft data and near real-time aircraft event data via its AireonINSIGHTS product for select Boeing airplane programs. As part of its implementation of an enterprise Safety Management System (SMS), Boeing will integrate the ADS-B data into its safety analytics tools. Recognized worldwide as an industry best practice, SMS is an integrating framework for managing safety risks. Through the use of data science and data analytics, the information will deliver insights to proactively identify hazards and monitor emerging safety trends.

Avanti and Viasat Energy Services Sign Long Term Ka-band Capacity Lease Agreement
June 23, 2022 – Avanti Communications has signed a long-term capacity lease agreement with global communications company Viasat Inc to help support the connectivity needs of its customers in the energy sector. Capacity from Avanti's fleet of HYLAS Ka-band satellites will be used to extend coverage across the North Sea and Western Africa. Viasat and Avanti have a long-standing relationship having signed prior Ka-band capacity lease agreements. This latest lease agreement will allow Viasat to accelerate the deployment of Ka-band solutions to its Viasat Energy Services customers. In 2021, RigNet merged its capabilities with Viasat to become Viasat Energy Services, offering a global managed services network infrastructure.

Intelsat Selects Versa for Global FlexEnterprise Managed SD-WAN Service
June 22, 2022 – Intelsat is strengthening its global FlexEnterprise offering with a fully managed software-defined wide area network (SD-WAN) service based on Versa Networks' leading Secure SD-WAN solution, a component of Versa SASE. FlexEnterprise connectivity-as-a-service leverages the world's largest and most advanced integrated satellite fleet and ground infrastructure to enable service providers to extend the reach of enterprise networks quickly and cost-effectively. The combination of Intelsat and Versa brings together the benefits of FlexEnterprise with the added

security and performance features of Versa Secure SD-WAN. This enables service providers to combine satellite and terrestrial networks to deliver enterprise-grade network connectivity and services virtually anywhere users may be located.

Viasat Receives Stockholder Approval for Proposed Acquisition of Inmarsat

June 21, 2022 - Viasat Inc. announced today that, at its Special Meeting of Stockholders, it received the necessary stockholder approvals for the proposed acquisition of Inmarsat. Viasat continues to expect the transaction to close in the second half of calendar year 2022, subject to the receipt of certain regulatory approvals and clearances and the satisfaction of other customary closing conditions. The combined company will create a leading global communications innovator with enhanced scale and scope to affordably, securely, and reliably connect the world. Viasat believes the strategic combination will increase the pace of innovation to help drive new and better services for customers, broaden opportunities for employees, and provide a foundation for significant positive free cash flow.

easyJet to Unlock Environmental, Operational Benefits as First Airline Partner for Iris Programme from Inmarsat, ESA

June 21, 2022 – easyJet announced as the first airline partner of the ground-breaking Iris programme by Inmarsat and the European Space Agency (ESA), which utilises the latest generation of satellite technology to modernise air traffic management (ATM). One of Europe's leading airlines will play a central role in the Iris programme, which enables real-time collaboration between pilots, air traffic controllers and airline operation centres using secure, high-bandwidth data links. This minimises delays, saves fuel and reduces environmental impact for airlines, while also improving airspace usage to ease congestion and accommodate future growth. Powered by Inmarsat's award-winning SwiftBroadband-Safety (SB-S) connectivity platform, Iris enables new ATM functionalities such as trajectory-based operations that pinpoint aircraft in four dimensions (latitude, longitude, altitude and time), which will allow the airline to avoid holding patterns, calculate the shortest available routes and optimum altitudes, and benefit from continuous climb and descent pathways. The additional datalink capacity provided by SB-S will power a host of powerful onboard digital applications, such as AI flight profile optimisers and real-time weather applications.

Inmarsat and Fameline MOU Extends Strategic Collaboration

June 20, 2022 – A Memorandum of Understanding (MoU) has been signed between Fameline Holding Group (FHG), its subsidiaries and Inmarsat – the world leader in global, mobile satellite communications – extending an existing strategic collaboration. The MoU expresses the intent of both organisations to explore joint initiatives across the maritime and energy sectors to benefit both parties. Headquartered in Limassol, Cyprus, FHG is an international network of organisations representing industries including maritime, satellite communications and energy. Signed on 7 June 2022 at the Posidonia International Shipping Exhibition in Athens, Greece, the MoU aims to identify "mutually beneficial areas of cooperation", bilateral trade opportunities and deeper strategic collaboration between the parties and key shipowners.

Fully Operational SES-17 Starts Delivering Connectivity Services across Americas

June 16, 2022 – SES announced today that its newest geostationary Ka-band satellite, SES-17, is now fully operational over the Americas, the Caribbean and the Atlantic Ocean at 67.1 degrees West. The all-electric propulsion satellite has reached orbit per schedule after months of in-orbit raising and successful in-orbit testing. The very high throughput SES-17 satellite built by Thales Alenia Space is ready to provide unparalleled connectivity services to customers across aeronautical, maritime, enterprise, and government markets whether on land, at sea, or in the skies. SES-17 anchor partner, Thales InFlyt Experience, will leverage SES-17 for FlytLive, a next-generation aviation connectivity solution enhancing Wi-Fi experiences onboard commercial aircraft across the Americas and the Caribbean. Moreover, key enterprise customers in Brazil, Argentina, Colombia, Mexico, Canada,

including SSi Canada and COMNET, will now expand the reach and capability of their broadband networks to more remote areas.

Hughes Successfully Tests 5G Satellite Backhaul, Verifies Interoperability

June 14, 2022 – Hughes Network Systems, LLC (HUGHES), an innovator in satellite and multi-transport technologies and networks for 50 years, today announced the successful testing of 5G satellite backhaul with the company's JUPITER™ System ground platform. Over a series of tests at its Germantown, MD, gateway, Hughes engineers connected 5G smartphones to the internet with JUPITER System infrastructure – including a very small aperture terminal (VSAT), gateway and high throughput satellite. The tests validated the compatibility of the Hughes technology with a 5G open radio access network (O-RAN) system, representative of any 3GPP standards-based, standalone 5G deployment.

Oneweb, Stellar Blu Solutions Successfully Deliver LEO Inflight Connectivity on Boeing 777 Test Flight

June 14, 2022 – OneWeb together with commercial aviation terminal partner Stellar Blu Solutions achieved a significant milestone on May 28, when it successfully delivered high-speed, low-latency inflight LEO satellite connectivity to a commercial airliner. Stellar Blu, has partnered with antenna technology provider Ball Aerospace to incorporate its electronically steered arrays (ESA) into the terminal solution. This collaboration realised breakthrough performance on OneWeb's low earth orbit (LEO) network. The new Stellar Blu platform, known as "Sidewinder", will continue flight testing through the remainder of 2022, with a target for certification and availability in mid-2023. This test flight validates not only the installation and integration of the aircraft terminal, but underscores the performance of the antenna technology, and verifies the reliability of the connectivity during taxi, take-off, landing and typical aircraft flight manoeuvres. As with any test flight, the assessment of performance reviewed expected parameters against vendor specifications, while also instrumenting and verifying on-aircraft impact and operating characteristics.

ST Engineering iDirect Achieves ESA Certification, Advancing Aerospace Manufacturing Capabilities

June 14, 2022 – The spaceflight industry planted a new flag in Belgium today as ST Engineering iDirect announced that it will be manufacturing components used in flight systems for spacecraft to European Cooperation for Space Standardization (ECSS) standards at its Manufacturing Competence Center (MCC) in Erpe-Mere, Belgium. Following the stringent certification process by the European Space Agency (ESA), ST Engineering iDirect will help to make components for QinetiQ, the British multinational defense and space technology company. This makes ST Engineering iDirect the sole subcontracting company offering these services in Belgium. ST Engineering iDirect's MCC will provide its specialist manual and automated soldering services to QinetiQ for its ADPMS-3 satellite board computer systems and for the International Berthing and Docking Mechanism (IBDM) currently in development with ESA, enabling vehicles carrying cargo or passengers to dock softly, with less force. Furthermore, it will also assist in building components for payload projects.

Airbus Launches Airspace Link HBCplus – The Flexible High Bandwidth Connectivity Solution for Airlines

June 14, 2022 – Airbus has launched Airspace Link HBCplus, its new flexible satellite connectivity solution that will be offered as an SFE line-fit catalogue option and also for retrofit on all Airbus programmes. HBCplus, which initially encompasses Ka-band services, will enable airlines to connect to a choice of Managed Service Providers (MSPs) via a new certified terminal and radome built as part of the aircraft. In the future it is planned to extend HBCplus to include MSPs which offer Ku-band services. To this end Airbus has selected connectivity satcom leader Inmarsat as the first MSP, contributing its GX Aviation inflight broadband solution which offers reliable and seamless passenger experience with global coverage and capacity for future growth. Additional MSPs will join the HBCplus offering in due course.

INTEGRASYS Opens New Office in Australia

June 8, 2022 – Continuing with the expansion, INTEGRASYS founded INTEGRASYS Australia and opens the new Australian facility at 2 Park Street, Sydney, New South Wales, the central business district of Sydney. INTEGRASYS Australia will be managed by our newly appointed Australia Sales Director, Erik Sorlie. INTEGRASYS has invested in having local offices worldwide, to be closer to its customers to proving better support, and customization, and to enable new services quicker and easier in any of the markets locally. The software company has accomplished its goal for 2022 organic growth to have presence in the 5 continents. INTEGRASYS sees great business as well as major potential in Australia, due to its multiple customers in the area, as well as the defense projects happening in the short-term, such as JP9102.

Kepler Selects TESAT to Provide Optical Terminals for Next-generation Constellation

June 8, 2022 — Kepler Communications has selected Tesat-Spacecom, a satellite payload equipment provider, to supply optical inter-satellite links for its next generation of satellites. TESAT's ConLCT80 (constellation laser communication terminals) will be installed on Kepler's first tranche of ÆTHER satellites, enabling optical service for The Kepler Network, a real-time, always-on communication network in Low Earth Orbit (LEO) providing the internet in space for space assets. Kepler's next-generation of satellites will provide data on-demand at up to 2.5 Gigabit-per-second for the end-user.

C-COM Receives Significant Antenna Orders from Hughes for Seamless Integration with JUPITER™

June 8, 2022 – C-COM Satellite Systems Inc., a leading global provider of commercial grade mobile auto-deploying satellite antenna systems, announced today, that it received multiple antenna system orders from Hughes Network Systems, LLC (HUGHES), an innovator in satellite and multi-transport technologies and networks for 50 years. The antennas, manufactured by C-COM, are designed and approved to integrate seamlessly with the Hughes JUPITER™ System, the most widely used satellite ground system in the world and the de facto industry standard for satellite broadband implementations. This multi-unit order for the C-COM manufactured iNetVu® 98G Ka-band Vehicle Mount antenna and the iNetVu® MP-100-MOT Manpack antenna has recently been delivered to a Hughes customer in Africa.

Gilat Receives Over $8 Million Follow-On Order for Support of Low Earth Orbit Constellation

June 6, 2022 – Gilat Satellite Networks Ltd., a worldwide leader in satellite networking technology, solutions, and services, announced today it received an over $8 million dollar follow-on order for support of gateways of a Low Earth Orbit (LEO) constellation. Gilat's subsidiary, Wavestream, was chosen as the sole provider to supply Gateway Solid State Power Amplifiers (SSPAs) to a leading satellite operator to support the LEO constellation gateways. The order is above and beyond last year's previously announced $50 million contract, which is currently being delivered.

SES and Vodafone PNG Join Forces to Deliver 4G and Future 5G Services via Satellite to Papua New Guinea

June 1, 2022 – Papua New Guinea (PNG) now has a new mobile service provider to choose from as Digitec Communications Limited (t/a Vodafone PNG) and SES have partnered up to provide 4G and 5G high-speed mobile broadband services. Both companies announced today that the reliable high-speed data service will be delivered via SES's O3b medium earth orbit (MEO) satellite constellation, which will further enable economic opportunities and bridge the digital divide in the world's second-largest island. Under this partnership, the O3b MEO satellite constellation will provide Digitec with high-speed mobile backhaul services for 5 locations in PNG. The connectivity that the O3b MEO satellite constellation brings is not new to PNG as it's been used by other mobile operators and internet service providers in the country since 2014. SES's O3b system is the world's only commercially successful non-geostationary satellite system and delivers low-latency, high-performance connectivity worldwide. The fibre-like speeds enable the delivery of cloud computing applications and services to bridge the digital divide, while connecting communities and industries

regardless of the remoteness of the location.

Comtech Awarded a 5G Contract with a Tier-One Mobile Network Operator in Saudi Arabia
June 1, 2022 – Comtech Telecommunications Corp. announced today that during its fourth quarter of fiscal 2022, its Trusted Location group, a division of Comtech's Commercial Solutions segment, was awarded an agreement with a tier one operator in the Kingdom of Saudi Arabia (KSA) to support their 5G standalone network. This is the second 5G project for Trusted Location in the KSA. This mobile network operator will expand their current location technology platform for emergency response, safety, security, and value-added services. The operator will grow the 5G network within KSA, providing better performance to end users and meet new government mandates.

Thuraya Celebrates 15 Years of Pioneering Satcom Leadership in Asia-Pacific
June 1, 2022 – Thuraya has opened a new office in Singapore to mark the 15th anniversary of the brand's entry into the Asia-Pacific market. Ever since its acquisition by Yahsat in 2018, Thuraya has been steadily growing its presence in the region. The unveiling of the new office, which took place together with partners and customers, serves as a testament to the growth and success of the business over the past few years. Thuraya's products and services are highly popular in the Asia-Pacific market, with its latest maritime solution, the MSUA award-winning Thuraya MarineStar, making sustainable fishing affordable in the region. The brand's 15th anniversary celebrations included a traditional lion dance performance – in deference to Singapore's culture. This is said to bring blessings of health, prosperity and happiness to all present.

BROADCAST

TIM Tests Multicast Technology on Satellite, Live Streaming Available Even in Remote Areas
June 27, 2022 – TIM tests multicast signal distribution over satellite network to offer its customers the possibility of experiencing all entertainment in live streaming, even in the country's most remote areas. The testing, delivered through the TimVision Box in Adaptative Bit Rate (ABR) multicast mode, was developed in collaboration with Eutelsat, which owns and operates the EUTELSAT KONNECT satellite dedicated to providing Internet services in Europe and Africa, and with Broadpeak to use the nanoCDN™ solution for content distribution. Multicast functionality enables streamed broadcasting of highly popular live events without duplicating transmission flows, providing maximum quality live coverage, in particular for video content broadcast at HD and UltraHD resolutions. This means the same content can be distributed indiscriminately and simultaneously to connected users without taking up additional network and transmission resources, also ensuring the simultaneous availability of adequate bandwidth for all other satellite services.

LAUNCH / SPACE

Relativity Space and OneWeb Sign Multi-launch Agreement for Terran R
June 30, 2022 – Relativity Space has signed a multi-year, multi-launch Launch Services Agreement (LSA) with OneWeb. Under the agreement, Relativity will launch OneWeb's low Earth orbit (LEO) satellites on Terran R, the first fully reusable and entirely 3D printed rocket, starting in 2025. These launches will support OneWeb's deployment of its Gen 2 satellite network, which will add capacity and fresh capabilities to build upon the initial constellation of 648 satellites that the company is currently building out. Terran R will launch OneWeb missions from Launch Complex 16, Relativity's site at Cape Canaveral Space Force Station, where the first entirely 3D printed rocket, Terran 1, is also set for its first orbital launch this year. As a medium-heavy lift, fully reusable launch vehicle made for growing satellite constellation launch demand and, eventually, multiplanetary transport, Terran R provides both government and commercial customers affordable access to space, in LEO and beyond. With the addition of its multi-launch agreement with OneWeb, Relativity has a total of five signed

customers for Terran R, including multiple launches and totalling more than $1.2B in backlog.

Turion Space and Exolaunch Announce Launch Agreement for DROID.001 aboard SpaceX Falcon 9
June 30, 2022 – US Company Turion Space, building spacecraft for space logistics services including space debris removal and space situational awareness data, has selected Exolaunch, a global provider of launch, deployment and integration services for small satellites, to provide launch services for their first DROID spacecraft aboard a Falcon 9 Transporter rideshare mission. The launch is planned for early 2023 using the Exolaunch's CarboNIX separation system that proved its reliable performance having deployed nearly 40 microsats over 9 missions yet. This is the first mission for Turion Space, named "Get it Up There" to serve as a demonstrator for a fleet of satellites designed, assembled, launched, and operated by Turion Space. This fleet is designed to provide on-demand and recurring inspection data of other space objects in low-earth orbit and host internal development experiments for future space logistic services including space debris removal.

SES's C-band Satellite Successfully Launched Onboard SpaceX Rocket
June 29, 2022 - SES announced today that the SES-22 satellite was successfully launched into space onboard a SpaceX Falcon 9 rocket from SpaceX's Space Launch Complex 40 at Cape Canaveral Space Force Station in Florida, United States. The first of SES's C-band satellites dedicated to freeing up the lower 300 MHz of C-band spectrum is built by Thales Alenia Space, and will operate in the 135 degrees West orbital slot. It will deliver TV and radio to millions of American homes and provide other critical data transmission services. SES-22 is expected to start operations by early August 2022.
The launch of SES-22 is part of a broader Federal Communications Commission (FCC) program to clear a portion of C-band spectrum to enable wireless operators to deploy 5G services across the contiguous US (CONUS). In response to a mandate from the FCC, satellite operators such as SES are required to transition their existing services from the lower 300 MHz to the upper 200 MHz of C-band spectrum to make room for 5G. To meet the FCC's accelerated deadline of clearing C-band spectrum across the US by December 2023 while maintaining uninterrupted services, SES will launch five satellites – SES-18, SES-19, SES-20, SES-21 and SES-22 in 2022.

Sierra Space Partners with Turkish Space Agency and ESEN Sistem Entegrasyon on Low-Earth Orbit, Lunar and Astronaut Programs
June 29, 2022 – Sierra Space, a leading commercial space company at the forefront of creating and building the future of space transportation and infrastructure for low-Earth orbit (LEO) commercialization, the Turkish Space Agency and ESEN Sistem Entegrasyon (ESEN) announced today the signing of a new Memorandum of Cooperation (MOC). The three parties will combine efforts on Sierra's Space's low-Earth orbit, lunar and astronaut programs. The MOC agreement outlines plans for Sierra Space and ESEN to work in partnership with the Turkish Space Agency for the next five years on a wide range of space technologies and applications, including the Dream Chaser® spaceplane and LIFE™ (Large Integrated Flexible Environment) habitat for future commercial LEO destinations.

Airbus Awarded FORUM Earth Monitoring Satellite Contract from ESA
June 28, 2022 – Airbus has been awarded a €160M contract for the European Space Agency's (ESA) FORUM satellite to measure heat emitted from the Earth into space. FORUM, short for Far-infrared Outgoing Radiation Understanding and Monitoring, will be the first satellite to observe Earth in the far-infrared part of the spectrum, providing unique measurements of the Earth's outgoing energy to help improve understanding of the climate system. Measurements from FORUM's spectrometer will enable scientists to compile a high resolution view of the Earth's greenhouse effect and the properties of ice clouds and water vapor in the atmosphere. Airbus is mission prime with OHB providing the instrument. Airbus in Stevenage will lead the development of the satellite, with Airbus in Germany responsible for the Instrument signal detection chain, and Airbus in France providing platform product support. Using in-orbit proven technology will considerably reduce risk and costs on the programme. Avionics for the mission have been developed, validated and flown together on

previous missions, which will enable savings in verification activities, software development and operating procedures.

Rocket Lab Launches CAPSTONE Spacecraft, Completes First Leg of Moon Mission for NASA

June 28, 2022 – Rocket Lab has successfully launched CAPSTONE, a microwave-oven-sized satellite designed to test a new orbit around the Moon for NASA. CAPSTONE was launched at 09:55 UTC, June 28 on an Electron rocket from Rocket Lab Launch Complex 1 in Mahia, New Zealand. The mission was Rocket Lab's 27th Electron launch. Designed and built by Tyvak Nano-Satellite Systems, a Terran Orbital Corporation, and owned and operated by Advanced Space on behalf of NASA, the Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment (CAPSTONE) CubeSat 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 multipurpose Moon-orbiting station that will provide essential support for long-term astronaut lunar missions as part of the Artemis program.

NanoAvionics Records First Ever 4K Resolution Full Satellite Selfie in Space

June 28, 2022 – NanoAvionics have used an off-the-shelf consumer camera, mounted on a selfie stick, to take the first ever 4K resolution full satellite selfie in space with an immersive view of Earth. The 12-megapixel photos and 4K video clips, taken with a GoPro Hero 7, show the company's MP42 microsatellite flying 550 km above the Coral Sea and the Great Barrier Reef – the only living structure visible from space – along the North-East limb of Australia. In addition to the stunning imagery, NanoAvionics used the camera to test and verify satellite operations and their new payload controller, designed to optimise downlink for applications that require onboard processing of huge data packages. The company anticipates more future usages of real satellite footage, live and recorded, such as deployment confirmation, fault detection, micro-meteorite impacts and educational purposes. The satellite was launched for NanoAvionics's MP42 microsatellite bus heritage mission aboard a SpaceX Falcon 9 in April this year.

Thales Alenia Space Reaches Major Milestone in CRISTAL Mission Development for Europe's Copernicus Earth Observation Program

June 27, 2022 – Thales Alenia Space, the joint company between Thales and Leonardo, has signed an amendment to the CRISTAL contract with Airbus Defence and Space, prime contractor for the satellite. The amendment provides for the development and qualification of IRIS, the Interferometric Radar Altimeter for Ice and Snow to be carried on the Copernicus polaR Ice and Snow Topography ALtimeter (CRISTAL) mission. CRISTAL is part of the European Space Agency's Copernicus Expansion program, in partnership with the European Commission. Copernicus is a European flagship program providing Earth observation and in situ data, along with a broad range of services for environmental monitoring and protection, climate monitoring and natural disaster assessment to improve the quality of life for all European citizens.

First Ariane 5 Launch of 2022 is a Success, Supporting Two Loyal Clients of Arianespace: MEASAT (Malaysia) and NSIL (India)

June 22, 2022 – On Wednesday, June 22, 2022 at 06:50 pm local time, an Ariane 5 launcher lifted off from the Guiana Space Center, Europe's Spaceport in Kourou, French Guiana (South America), successfully orbiting two geostationary telecommunication satellites, MEASAT-3d and GSAT-24. MEASAT-3d, to be co-located with MEASAT-3a and MEASAT-3b in the 91.5°E orbital slot, is a multi-mission telecommunications satellite built by Airbus Defence and Space. It will significantly enhance broadband speeds of up to 100 Mbps per user in areas with limited or no terrestrial network throughout Malaysia, while continuing to provide redundancy and additional capacity for video distribution in HD, 4K, and ultimately 8K in the Asia-Pacific region. MEASAT-3d will also carry an extremely innovative payload on behalf of the Korean operator KTSAT. Conceived by Airbus Defense and Space, it will be used by the Korean Augmentation System (KASS), a project of the Ministry of Land, Infrastructure and Transport led by KARI, the Korean Space Agency, to significantly improve air

traffic control in South Korea. GSAT-24 is a Ku-band 4-ton class communications satellite built by the Indian Space Research Organization (ISRO) for NewSpace India Limited (NSIL) that will provide high-quality television, telecommunications and broadcasting services across India. It will be the first "Demand Driven" communications satellite mission undertaken by NSIL.

Thales Alenia Space Takes New Steps in Satellite Navigation Programs, EGNOS and Galileo

June 22, 2022 – Thales Alenia Space has signed a new contract with the EU Agency for the Space Programme (EUSPA) to develop, qualify and deploy the new European Geostationary Navigation Overlay Service (EGNOS) version. Thales Alenia Space has also just reached a new milestone in the Galileo program with the integration of a new satellite into Galileo's Ground Mission Segment (GMS) which will improve positioning service for 3.3 billion users. The EGNOS system improves positioning accuracy, reliability and integrity by enhancing the performance of global navigation satellite systems (GNSS) such as GPS and, in the future, Galileo. The main service provided by EGNOS today is to support civil aviation operations for specific GNSS approaches. Thales Alenia Space will provide EUSPA and the EU Navigation community with a new version of EGNOS (V243), whose operations will be secured by a new state-of-the art Navigation Land Earth Station technology developed by Thales Alenia Space – NLES-G3. The NLES transmits the EGNOS message containing all accuracy & integrity corrections to the Geostationary satellites for broadcast to users as aviation operators. Thales Alenia Space NLES-G3 will be integrated with a new geostationary satellite "GEO3" which will enhance the EGNOS system and its end-to-end performance. Certification and commissioning of this latest version is slated for 2024.

SSTL Ships the THEOS-2 SmallSAT to GISTDA in Thailand

June 20, 2022 – Surrey Satellite Technology Ltd (SSTL) has shipped the THEOS-2 SmallSAT, a 100kg Earth Observation satellite, to the Thai Geo-Informatics and Space Technology Development Agency (GISTDA) in Sri Racha, Thailand. Manufactured in the UK under a 4 year customer training programme, the THEOS-2 SmallSAT is a one metre resolution class Earth Observation satellite with both still and video imaging capability, an ADS-B aircraft identification payload, and a Thai customer developed experimental payload. The ADS-B payload is specific for the THEOS-2 SmallSAT and is based on the newly developed SSTL Software Defined Radio which is configurable in orbit, and which has been designed to complement SSTL's range of small satellite sensors. The THEOS-2 SmallSAT is based on SSTL's CARBONITE series of earth observation spacecraft and will be operated by GISTDA from Thailand with support for early operations from SSTL. The THEOS-2 SmallSAT programme was delivered as part of the THEOS-2 Earth Observation Programme in collaboration with Airbus Defence and Space, who are delivering a very high resolution satellite and a comprehensive geo-intelligence system.

Globalstar Announces Successful Launch of Spare Satellite

June 19, 2022 – Globalstar, Inc., a leading provider of satellite-powered innovation, today announced the successful launch of the FM-15 spare satellite from Cape Canaveral's Kennedy Space Center. FM-15 is the 25th and final satellite of Globalstar's second-generation constellation, which was manufactured and stored by Thales Alenia Space. The satellite is expected to remain as an in-orbit spare and will only be raised to its operational orbit at a future date, if needed. Launch services provider SpaceX confirmed that the upper stage of the Falcon 9 rocket accurately injected the satellite into its targeted low earth orbit. Globalstar has begun initial in-orbit testing and the satellite is operating nominally at this time.

GISTDA and Airbus to Cooperate Further on the Future Space Missions in Thailand

June 17, 2022 – On June 9, in the presence of Dr. Anek Laothamatas, Minister of Higher Education, Science, Research and Innovation of Thailand, GISTDA (Geo-Informatics and Space Technology Development Agency) and Airbus signed a Letter of Intent on cooperation related to future Space missions in Thailand. This cooperation is aimed at preparing the implementation of future Thai

satellites and derived services. After the success of the first Earth-Observation satellite system named THEOS-1, built by Airbus, launched in 2008 and still fully operational, and following the award to Airbus of the second Earth-Observation satellite system named THEOS-2 in 2018, GISTDA is currently studying the development of follow-up Space programmes. Those programmes should be built on the foundation of both THEOS-1 and THEOS-2 missions in order to amplify Thai Space capabilities to address the country's needs and strongly contribute to the nation's economic development and societal well-being. Airbus will study with GISTDA solutions for the future Thai Earth-Observation system which will be used for supporting the operations in various aspects, including but not limited to, Social and Security management, Cities and Economic Corridors Management, Natural Resources and Ecosystems Management, Water Management, Disaster Management and Agricultural Management.

Thales Alenia Space and Telespazio Sign Follow-on Contract with Italian Ministry of Defense to Develop the SICRAL 3 Satcom Yystem

June 17, 2022 – Thales Alenia Space and Telespazio, the joint venture between Leonardo (67%) and Thales (33%), have signed a follow-on contract with the Italian Ministry of Defense1, for the SICRAL 3 secure satellite communications system and its ground segment. This latest contract covers the development of phase D2. It continues a complex, process that started with the initial phases 0/A, followed by phases B and C and several implementation phases, leading up to the launch of SICRAL 3A by 2026 and subsequently the launch of SICRAL 3B. SICRAL, the Italian System for Secure Communications and Alerts, comprises geostationary satellites for strategic and tactical communications, which support various defense missions, both in Italy and abroad. The new SICRAL 3 system is designed to meet Italian defense communications and interoperability requirements. It will ensure continuity with the current SHF and UHF-band telecom services provided by the SICRAL 1A, 1B and SICRAL 2 satellites, while expanding its range of services with a new Ka-band payload, as well as supporting security, public rescue and civil protection services.

NILESAT 301 Communications Satellite Successfully Launched

June 9, 2022 – The NILESAT 301 communications satellite built by Thales Alenia Space for the Egyptian operator NILESAT was successfully launched today from Cape Canaveral launch pad, Florida (USA), on board of a SpaceX Falcon 9 rocket. Thanks to a powerful Ku-band mission NILESAT 301 will reinforce NILESAT commercial leadership in broadcast services at 7°W over MENA and opening new services over Southern Africa and Nile Basin. In addition, a state-of-the art multibeam Ka band mission will support NILESAT entry in the broadband connectivity market over Egypt. As prime contractor, Thales Alenia Space was responsible for satellite design, production, testing and in-orbit acceptance tests. NILESAT will also benefit from brand new satellite control facilities installed in Cairo and Alexandria, which are already operational to control NILESAT 201 in orbit. The satellite is based on the Spacebus 4000-B2 platform with about 4 metric tons at launch and a design life exceeding 15 years. Following NILESAT 201, NILESAT 301 is the second geostationary communications satellite built by Thales Alenia Space for NILESAT. It is also the fourth payload developed by Thales Alenia Space for the Egyptian operator.

EXECUTIVE MOVES

Viasat's Mark Dankberg to Resume Chairman & CEO Roles

June 29, 2022 - Viasat Inc. announced that, effective July 1, 2022, Mark Dankberg, Viasat's co-founder and executive chairman, will resume the roles of chairman and CEO, while current President and CEO Rick Baldridge will assume a newly created vice chairman position. Baldridge will focus on the remaining steps to closing the Inmarsat acquisition, and the organizational integration planning and execution strategy to position the combined companies to achieve the financial and operational objectives underpinning the transaction – including cost, capital, and revenue synergies already identified. The organization change follows Viasat's recent overwhelming shareholder approval for

the acquisition of Inmarsat. Baldridge will also continue to lead Viasat's evaluations of strategic initiatives and certain ongoing organizational initiatives. Baldridge's new role also reflects the results of internal organizational planning and evolution over the past two years designed to scale Viasat internal operational responsibilities. Since co-founding Viasat in 1986, Dankberg has led Viasat's growth, technology strategy and commercial operations over many years, and served as chairman and CEO from inception through 2020. Now, Dankberg will be supported in overseeing Viasat's day-to-day operations by Kevin Harkenrider, a long time Viasat executive with experience in a broad range of operating roles who was promoted to Chief Operating Officer in 2021.

David Schmoock Joins ORBCOMM as Chief Operating Officer

June 23, 2022 – David Schmoock has joined ORBCOMM as Chief Operating Officer, a new position reporting to Marc Eisenberg, Chief Executive Officer. Mr. Schmoock will oversee ORBCOMM's day-to-day operations, including customer experience, supply chain management, business operations, project management and execution of the company's strategy and related initiatives. Mr. Schmoock has over 20 years of experience in the technology sector leading large global teams at Fortune companies, including Dell as President of North America Commercial Sales and Lenovo as President of the North America business, with expertise in change management, operational efficiency, organizational design and cross-functional partnerships. He spent his early career at Xerox in sales and marketing positions and served in the U.S. Army as a medical specialist.

KVH Industries Names Brent Bruun President, Chief Executive Officer, and Director

June 22, 2022 – KVH Industries, Inc. has appointed Brent C. Bruun as President and Chief Executive Officer and a member of the Board. The Board also appointed two seasoned industry executives, David Kagan and David Tolley, as directors of KVH. Mr. Bruun has served as KVH's Interim President and Chief Executive Officer since March 2022. He first joined KVH in 2008 and played a critical role in the growth of the Company's industry-leading mobile connectivity business.

Comtech Strengthens Leadership Team for Its U.S. Based Satellite-Focused Business Line

June 2, 2022 – Comtech Telecommunications Corp. has appointed a new divisional Chief Operating Officer (COO) in Jon Opalski and created a new General Manager of Digital Products position that will be filled by Bob Pescatore. Both individuals bring deep communications and military expertise to Comtech's satellite business line and will report to Daniel Gizinski who was named President of Comtech's U.S. based satellite product line in January 2022. Opalski will be responsible for driving operational excellence at both Comtech's existing Santa Clara site and for the new state-of the-art Chandler, Arizona high-volume manufacturing and technology facility. Pescatore will lead the Satellite Network Technologies Digital Products Team in continuing development of industry leading satellite modems, network products, and cybersecurity support, ensuring flawless program execution and high customer satisfaction.

Astroscale Names Nick Shave as Managing Director

June 1, 2022 – Astroscale Ltd., the U.K. and European subsidiary of Astroscale Holdings Inc. ("Astroscale"), the market leader in satellite servicing and long-term orbital sustainability across all orbits, announces that Nick Shave will succeed John Auburn as Managing Director effective from today, June 1, 2022. Shave joins Astroscale at a time of tremendous growth in the U.K. following the recent announcement of ESA's Sunrise Partnership Program to develop Astroscale's ELSA-M servicer and debris removal mission and ESA's CREAM II Collision Avoidance Program. Shave, formerly VP of Strategic Programs at Inmarsat, and current Chair of UKspace, the trade association of the U.K. space industry, brings more than 30 years of space sector experience to Astroscale. He has delivered significant business growth and results whilst performing senior management, engineering and sales roles at Inmarsat, CGI, Logica and at the UK MOD Defence Research Agency.

REPORTS

NSR: Maritime Users to Increase Satellite Constellations Spending by 16x

June 29, 2022 – NSR's *Maritime Satcom Markets, 10th Edition* report finds Satellite Constellations from the likes of SES mPower, Starlink, OneWeb, Telesat Lightspeed, and more, poised to start a new era for maritime satellite connectivity. The revolution of low latency satellite constellations is underway, and their entrance into the Maritime market will have a profound impact on both uptake and revenue.

NSR's Global Satellite Manufacturing & Launch Report Projects $633 Billion Market by 2031

June 21, 2022- NSR's *Global Satellite Manufacturing and Launch Markets*, 12th Edition sees global satellite manufacturing and launch market positioned to generate $633B through the next decade. Primarily driven by non-GEO constellations, 33,000+ satellites are projected to be manufactured and launched by 2031. With over 150 satellite constellations in various phases of funding and development, this segment is critical to the revenue picture for manufacturing & launch markets.

WTA Releases Pros and Cons of the LEO Gateway Business Report

The World Teleport Association (WTA) today released *Pros and Cons of the LEO Gateway Business*, a new research report that explores how the explosive wave of growth in LEO constellations for broadband and Earth observation has given rise to unexpected demand for communication gateways around the world. This new LEO revolution is having a significant impact on the teleport sector, and there is optimism among operators, service providers and technology vendors that a sizable, long-term business opportunity is developing.

OneWeb Research Shows Better In-flight Connectivity Could Transform Passenger Wellbeing

June 13, 2022 – OneWeb has today released initial findings from its first *OneWeb Connected Passenger Report*, an extensive survey of passenger attitudes toward air travel and inflight connectivity (IFC) in the post-pandemic landscape. To undertake the research, OneWeb partnered with leading independent international research agency, TAG Research, to collect both qualitative and quantitative data. The qualitative sample was collected in twenty-seven individual, hour-long interviews with frequent flyers across 5 key groups including corporate travel bookers, digital nomads, travel bloggers, and young frequent flyers. The qualitative data was obtained through a detailed survey completed by 4,110 individuals from across the US, UK, Singapore and the UAE.

Euroconsult: Study Assesses the Use of Several C-Band Sub-frequencies by Satellite Networks

June 2, 2022 – A new report has explored the current and future supply and use of the extended C-Band, the planned C-Band and the 7025-7075 Mhz Band for satellite services (available in full on the Euroconsult website). It has considered for each band the uplink and downlink frequencies, including the frequency bands 3400-3700 and 6425-6725 MHz ('extended C-band'), 4500-4800 and 6725-7025 MHz ('planned C-band') and 7025-7075 MHz. The independent study focused specifically on satellite communication and television services for member countries of the Arab Spectrum Management Group (ASMG), the African Telecommunication Union (ATU), the European Conference of Posts and Telecommunications (CEPT) and Russia. The study encompasses current utilization by frequency band, type of application and geographic region, including recent trends; user types with case examples; the breakdown of this supply and utilization between different combinations of downlink and uplink frequency bands.

NSR Releases the Aeronautical Satcom Industry Report

June 2, 2022 – NSR's *Aeronautical Satcom Markets*, 10th Edition (Aero10) is the leading industry report on the aeronautical connectivity markets, 10 years running. With comprehensive analysis of key macro and micro trends impacting the market, NSR's Aero10 lays out a 10-year regional, airframe-type, and capacity level forecast, and offers market share breakdown for service providers

and equipment manufacturers. NSR's Aero10 explores the short and long-term Covid-19 recovery trajectory for the Aero Market. The report takes a deep dive into the drivers, key to industry development, detailing addressable market growth and challenges across 8 regions.

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://apsccsat.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 (APRSAF-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.apscc.or.kr.