

APSCC Monthly e-Newsletter

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The Asia-Pacific Satellite Communications Council (APSCC) e-Newsletter is produced on a monthly basis as part of APSCC's information services for members and professionals in the satellite industry. Subscribe to the APSCC monthly newsletter and be updated with the latest satellite industry news as well as APSCC activities! To renew your subscription, please visit www.apsc.or.kr. To unsubscribe, send an email to info@apsc.or.kr with a title "Unsubscribe."

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

INSIDE APSCC

APSCC 2021 Webinar Series Continues LIVE Every Tuesday 9AM HK | Singapore Time from August 24

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

SATELLITE BUSINESS

Eutelsat ADVANCE, a New End-to-End Managed Connectivity service, Gains Early Traction in Maritime

July 29, 2021 - Eutelsat Communications today announced that the first agreements have been signed with maritime connectivity operators for Eutelsat ADVANCE, its new end-to-end managed connectivity solution. Several operators have selected Eutelsat ADVANCE to enhance their portfolios of connectivity services. Leveraging Eutelsat's powerful Ku-band in-orbit resources, Eutelsat ADVANCE will be integrated into the offerings, amongst others, of Telenor Maritime, SRH, Axess Networks, and Nearshore Networks to serve a wide spectrum of maritime market segments including cargo shipping, passenger ferries, cruises and offshore. With global coverage and the potential to scale to specific geographic zones when required, Eutelsat ADVANCE is an end-to-end managed connectivity service including network interconnection, a management portal and APIs for service providers and their clients, terrestrial connectivity as well as satellite capacity and terminals.

Inmarsat Unveils ORCHESTRA Communications Network

July 29, 2021 - Inmarsat unveiled plans for ORCHESTRA, their communications network of the future. In the largest ever transformation of its current world-class services, Inmarsat ORCHESTRA will bring together existing geosynchronous (GEO) satellites with low earth orbit satellites (LEO) and terrestrial 5G into an integrated, high-performance solution. Whether for a ship in a crowded port, an aircraft preparing to land at LAX, or a defence force deployed in a remote location, ORCHESTRA is designed to meet evolving connectivity needs in the mobility market with a service unmatched by any competitor offering, planned or in existence. ORCHESTRA will open up a host of new and previously unattainable possibilities for industries across the world. New services include close-shore navigation for autonomous vessels, next-generation emergency safety services for maritime crews, secure and tactical private networks for governments and direct-to-cloud connections for airlines. New segments set to benefit from ORCHESTRA include energy rigs and drilling platforms, mid-market business aircraft, coastal vessels, smart passenger ships and urban air mobility.

Intellian Expands with €6.5 Million Investment in New European Headquarters

July 29, 2021 - Intellian has announced the opening of its bespoke European Headquarters and Logistics Center in Rotterdam, underpinning a long-term commitment to the region. The new facility will further enhance the service and user experience of Intellian's partners and customers, both in Europe and beyond. The €6.5 million state-of-the-art facility has been custom-built by the satellite communications solutions and technology leader to achieve operational excellence and efficiency, streamline supply chains and provide fast, cost-effective product delivery to the important European market. With the landmark

investment in major Dutch port city Rotterdam, Korean manufacturer Intellian has secured ownership of a key location within Europe's center of commerce for maritime, ideally positioning the company to further strengthen its focus on achieving the highest levels of customer service in the years ahead. With growth and innovation intrinsic to Intellian's plans for the future, the Rotterdam project is one of several new premises opening this year. Its new Research and Development Center in Pyeongtaek, South Korea, was recently completed, while the UK team will take up new offices near Heathrow, London, making space for the growing team and offering proximity to many key partners. A new R&D facility focused on emerging technologies will also begin operations in Maryland, USA.

Satcom Global Launches Industry First with AuraNow VSAT

July 29, 2021 - Satcom Global is breaking new ground with the launch of AuraNow, a maritime VSAT solution offering unprecedented flexibility, enabling simultaneous access to high performance bandwidth along with significant cost savings. For the very first time, vessel managers and owners will be empowered to make unlimited changes to their onboard connectivity. They will have the ability to upgrade, downgrade and even suspend their service on-demand via a dedicated and secure customer portal. Unlike existing VSAT services available today, AuraNow customers will not be penalised for lowering their service plan or suspending their service. AuraNow meets current market challenges head on, at a time where vessels require an increasing amount of capacity to support more sophisticated digital applications, but the challenge remains to balance the communications budget. With bandwidth packages charged via daily increment, AuraNow allows customers to adjust their connectivity and spend, in line with their day to day and emerging requirements.

Eutelsat Supports Telespazio in the Roll-out of a Connectivity Solution in Peru

July 28, 2021 - Eutelsat Communications and Telespazio have concluded a contract for the provision of satellite capacity for rural backhauling in the context of Peru's national telecommunications programme, Pronatel. Under this multi-year agreement, Telespazio will use Ku-band capacity operated on several transponders on the EUTELSAT 117 West B satellite to bring telecommunications access to more than 1,300 underserved public sites, predominantly schools and health care facilities located across the Peruvian Amazon. This agreement is yet another testimony to Eutelsat's commitment to digital inclusion programmes initiated by public authorities in emerging countries. It also reflects the Group's steadfast commitment to bridging the digital divide, one of the cornerstones of its Corporate Social Responsibility (CSR) policy.

Shenzhen Airlines Conducts Breakthrough Test Flights Using Inmarsat's SB-S Connectivity Solution

July 28, 2021 - Inmarsat announced that its SB-S connectivity platform for aviation operations and safety has successfully powered the first ever test of a digital cockpit application on a Boeing 737 aircraft within Chinese domestic civil aviation. The tests were conducted by Shenzhen Airlines, in partnership with Inmarsat and China Transport Telecommunication Information Group Company Limited (CTTIC), during a number of flights between Beijing and Chongqing. SB-S provided a two-way communication channel between Aircraft Operations Centre (AOC) flight dispatchers and airline crew, allowing multiple different activities to be demonstrated, such as text message verification, video communication, voice messages and 6D position tracking. In addition, flight dispatchers were able to send the crew uploads of meteorological radar pictures in real time, while the crew sent pictures of cockpit equipment and conducted video calls mid-flight. SB-S, winner of the Jane's Air Traffic Control (ATC) Technology Award, combines cutting-edge satellite technology with secure IP connectivity to meet the needs of aviation data communications in the digital age. As the world's first and only global, secure broadband platform for aviation operations and safety, it provides airlines with capabilities and benefits no other satellite communications provider can deliver.

RSCC's Prime Challenge Today is to Ensure Internet Availability all across Russia

July 27, 2021 - On July 25, 2021, Alexey Volin, General Director of the Russian satellite operator RSCC, gave a talk to the attendees of the Senezh Management Lab as part of the Territory of Meanings All-Russian Youth Educational Forum. At the panel discussion "Who will get a ticket to the future?", Alexey Volin spoke about the place of the satellite operator in the technological chain of communication and broadcasting service providers, noting that a total of 385 million people from 58 countries enjoy communication and broadcasting services using RSCC satellites. "Our principal challenge today, which we are tackling together with the Ministry of Digital Development, is to provide access to the Internet throughout the country. Most of Russia's territory with its mineral deposits and rail and highway and river routes, and the Northern Sea Route, a vast economically vital territory, is currently outside the Internet

coverage. Our task is to ensure that people working in the Arctic, in remote and hard-to-reach areas, on railway, river, maritime and air transport do have the Internet, as well as access to information, electronic services and communications, and assistance which they can request, if necessary", stressed Alexey Volin. RSCC satellites in geostationary and highly elliptical orbits will be used to address the problem. Ground satellite terminals are currently under design and development jointly with NIIR. They can be installed on sea, river, railway transport, as well as buses, to provide on-the-move communication.

Comtech Awarded a Contract to Deploy Next Generation 911 Technologies and Services

July 26, 2021 - Comtech Telecommunications Corp. announced that, during its fourth quarter of fiscal 2021, its Safety & Security Technologies (SST) group, which is part of Comtech's Commercial Solutions segment, was awarded a multi-year statewide contract valued at US\$35.8 million to design, deploy, and operate Next Generation 911 (NG911) services for the State of Arizona. Total contract value includes a multi-year contract extension option. Excluding such option, the contract is valued at US\$23.5 million. The contract awarded to Comtech includes implementing Comtech's NG911 solutions to provide citizens with advanced communication capabilities when calling for emergency services, including police, fire and emergency medical services. Through use of Comtech's Next Generation Core Services (NGCS), the State of Arizona will be able to offer a seamless, coordinated and efficient NG911 system to all the State's local 911 centers. The award also includes an ability for Arizona to purchase Comtech's market leading Solacom Call Handling solutions for PSAPs and includes Comtech's new CyberSecurity software training program that will be available for employees on a statewide basis.

Inmarsat Invests in Santander Teleport to Host New Gateway for its Global Xpress and L-band Fleets

July 27, 2021 - Inmarsat has chosen Santander Teleport to host and maintain a new Satellite Access Station (SAS) for the new Inmarsat-6 satellites, the first of which is scheduled to launch at the end of 2021. The hosting of the SAS will consist of a dedicated area for a 13-metre Ka-band antenna and a second L-band antenna, a dedicated technical area to support multiple racks of equipment, and expansion capabilities for future antennas and rack equipment. The antennas will start providing services via the L-band and Ka-band Global Xpress payloads of the I-6-F2 satellite after its launch in 2022. Santander Teleport will operate the facilities and provide engineering and maintenance services to ensure a seamless operation of the Inmarsat infrastructure hosted onsite and the services relying upon it.

Kymeta Demonstrates LEO and GEO Interoperability with the u8 at Technical Demonstration

July 22, 2021 - Kymeta announced seamless interoperability between the Kymeta™ u8 terminal, Kepler Communications low earth orbit (LEO) satellites, and geostationary (GEO) SATCOM terminals at an annual military battle lab exercise focused on the integration of operations, intelligence, and technology. The u8 is the first and only terminal available today to demonstrate the automatic handover between a GEO SATCOM terminal and Kepler LEO constellation with high throughput for communications on the move (COTM) and on the pause (COTP). Today's warfighters require access to command and control (C2) networks providing message traffic, email, VoIP, and VTCs as well as higher throughput networks for sending and receiving large amounts of data. The demonstration proved that access to C2 networks and high throughput communications is possible with a single integrated terminal, the u8.

Intelsat 2Ku Now Available as a Linefit Option on Airbus A320-Family Aircraft

July 22, 2021 - Intelsat (formerly Gogo Commercial Aviation) today announced that the first factory-installed Intelsat 2Ku system has been delivered on an A321neo aircraft. The 2Ku system was installed by Airbus at its factory in Hamburg, Germany as part of its High Bandwidth Connectivity Service (HBCS) and delivered to Cathay Pacific. The Intelsat 2Ku antenna enables airlines to access the global Intelsat network and, in turn, a reliable and high-performance inflight entertainment and connectivity (IFEC) experience for their passengers and crew. The ability to offer the factory-installed option to airlines means Intelsat's services are available immediately at the time an airline receives its new aircraft. As the leading provider of inflight broadband connectivity to the commercial aviation industry, Intelsat's global reach, depth of capacity and vertical integration provides airlines with unmatched speed, reliability and flexibility – even when flying at full capacity in and out of the busiest airports. Airlines can also trust Intelsat's meaningful and easy-to-understand service level agreements (SLAs) to meet their passenger experience needs.

HughesNet Celebrates Five Years in Brazil, Expands Digital Inclusion across the Country

July 22, 2021 - Hughes do Brasil celebrates the five-year anniversary of HughesNet®, the company's flagship, high-speed satellite Internet service. Reaching more than 5,000 municipalities across Brazil,

HughesNet brings broadband access to consumers and small enterprises in the most remote and rural parts of the country – especially in places un-served by land-based Internet providers. For approximately 67% of subscribers, HughesNet represents their first on-premise Internet service, expanding digital inclusion across Brazil. Originating in the U.S., Hughes has been in the country since 1968 serving the business market and was responsible for the sale of the first Brazilian telecommunications satellite. The launch of HughesNet in 2016 marked the company’s entry into the consumer market. Hughes continues to invest in the connected future with new technology and services. The company is building a new ultra-high density satellite, called JUPITER™ 3, which will reinforce coverage and increase capacity over Brazil. It is expected to launch in the second half of 2022.

D-Orbit Announces AWS Ground Station Integration with AURORA Mission Control Software

July 22, 2021 - D-Orbit and an Amazon Web Services (AWS) announced integration of AWS Ground Station with D-Orbit’s AURORA cloud based mission control software. D-Orbit uses AWS Ground Station to power AURORA, manage increasingly complex missions for D-Orbit’s ION Satellite Carrier such as the on-going PULSE mission, and strengthen the D-Orbit space transportation and logistics infrastructure. D-Orbit also plans to use AWS Ground Station with AURORA to communicate with its WILD RIDE mission, launched on June 30th, and with D-Orbit’s future fleet. Together, D-Orbit and AWS accelerate SmallSat and CubeSat use cases such as Earth observation, global telecommunications, or space logistics. AWS Ground Station enables customers to downlink data and efficiently control satellite communications across multiple regions, process data, and scale operations without having to worry about building or managing their own ground station infrastructure, and to pay only for the actual antenna time used. D-Orbit’s AURORA mission control software reduces mission costs by turning the unpredictable expenses connected to software design, development, testing, deployment, and maintenance to a recurrent, predictable cost. D-Orbit’s cloud-based AURORA software is accessible through standard web browsers on multiple devices and includes all the tools needed to monitor and control a spacecraft, uplink commands, and downlink and process satellite data.

MEASAT-3 Satellite Update Affirms Resiliency of MEASAT Fleet

July 21, 2021 - MEASAT Global Berhad announced today that while MEASAT has maintained continuous telemetry and command control of the MEASAT-3 satellite since the previously reported anomaly on 21 June 2021, an in-depth investigation is still being conducted with Boeing Satellite Systems (BSS) to determine the root cause of the anomaly. To date, almost all customer services on MEASAT-3 have been restored onto backup satellite capacity on other co-located MEASAT satellites and third-party satellites serving the region. Migration and service restoration for broadcast services was immediate, affirming the resiliency of the MEASAT fleet at 91.5°E orbital hotspot. All the MEASAT-3 transponders have been deactivated to prevent interference with other satellites. MEASAT has also informed Combined Space Operations Centre (CSpOC) via Space-Track to track the MEASAT-3 satellite and notify other operators of the satellite’s orbital location, while the full investigation is being conducted by MEASAT and BSS. A report on the outcome of the investigation will be released in due course.

Comtech EF Data Awarded Multi-Million Dollar Contract for WAN Optimization Equipment

July 21, 2021 - Comtech Telecommunications Corp. announced today, that during its fourth quarter of fiscal 2021, its subsidiary Comtech EF Data Corp., a leading provider of satellite communications equipment (together Comtech), was awarded a multi-million dollar order for WAN optimization equipment from a leading system integrator in South Asia. The equipment will be utilized by a Ministry of Defense (MoD) in the region. The order is for the supply of FX-6020c and FX-5020c advanced network accelerators, using patented Turbostreaming® technology. The products will support a satellite infrastructure that complements a fiber network and provides backup communications. The Layer 2 transparent forwarding (“virtual wire”) traffic processing design, combined with a terrestrial-like communication user experience and throughput over satellite, enables the FX Series products to provide simplified operation, easy deployments and mitigation of satellite delay.

Gilat Signs Strategic Agreement Estimated at over US\$5 Million with Pacific Dataport

July 21, 2021 - Gilat Satellite Networks Ltd. signed a strategic agreement estimated at over US\$5 million with Pacific Dataport Inc. (PDI) for delivery of ubiquitous broadband coverage in Alaska. Gilat’s SkyEdge II-c, multi-service platform, will support the goal of PDI’s Aurora Network to deliver a wide range of applications to the population of Alaska. that will serve the Alaska market with both fixed and mobility applications. The targeted fixed applications range from direct-to-home broadband service to consumers, to an assortment of enterprise applications such as backup and full-time IP data services for businesses,

organizations, schools, libraries, and government. The planned mobility applications include cruise ships, fishing boats and commercial aviation. The reliability, efficiency and features of Gilat's SkyEdge II-c ground segment provide exciting and new opportunities for Pacific Dataport to customize applications throughout PDI's Aurora Ka-band Network. Gilat's platform is designed to support a wide range of vertical segments with terminals optimized for the best efficiency and performance per required application, such as broadband, enterprise, cellular backhaul, and high-speed mobility.

Kymeta Awarded Placement on \$950 Million IDIQ Contract by DoD

July 20, 2021 - Kymeta has been awarded a \$950,000,000 ceiling Indefinite-Delivery/ Indefinite-Quantity (IDIQ) contract for the maturation, demonstration and proliferation of capability across platforms and domains, leveraging open systems design, modern software and algorithm development in order to enable Joint All Domain Command and Control (JADC2). The contract is part of a multiple award multi-level security effort to provide development and operation of systems as a unified force across all domains (air, land, sea, space, cyber, and electromagnetic spectrum) in an open architecture family of systems that enables capabilities via multiple integrated platforms. Kymeta's next-generation solutions, including the Kymeta™ u8 terminal and Kymeta Connect™ connectivity services, offer seamless and uninterrupted mobile satellite-cellular and is designed to meet the needs of defense agencies, government, public safety, and commercial customers around the world. Today, the u8 is the only commercially available flat panel antenna that is compatible with LEO and GEO satellite constellations. Kymeta u8 terminals, antennas, and ODUs are easy to set up and acquire service within minutes of installation. The u8 is also available in a transportable configuration called the u8 GO, which is ideal for rapid deployments.

Comtech Awarded US\$7.1 Million Emergency Alerts Contract to Enhance Nationwide Public Safety

July 20, 2021 - Comtech Telecommunications Corp. announced today that, during its fourth quarter of fiscal 2021, it has been awarded a US\$7.1 million multi-year contract for the deployment of a cellular-based Wireless Emergency Alerts (WEA) solution with a tier-one mobile network operator. This is Comtech's first major award for a WEA solution. Comtech will install the containerized WEA solution consisting of the Commercial Mobile Service Provider (CMSP) Gateway and Cell Broadcast Center (CBC). This service allows the citizens in the area to receive government-issued alerts on their mobile devices warning them of imminent threats to life and property based on location, such as tornado warning alerts. The Comtech WEA solution supports the latest Federal Communications Commission (FCC) WEA requirements as well as the operator's LTE and 5G networks.

Oriental Consultant Global and Synspec Inc. Sign MoU to Utilize SAR Satellite Data

July 20, 2021 - Oriental Consultants Global Co., Ltd (OC Global) and Synspec Inc. have signed a Memorandum of Understanding (MOU) for a Strategic Alliance to promote the use of satellite data in the field of transportation and traffic infrastructure in Southeast Asia, South Asia, and Africa. Due to the novel coronavirus and the increasing frequency and intensity of natural disasters, the overseas infrastructure environment is changing, and new countermeasures are required. In this strategic alliance, OC Global and Synspec will work jointly on the implementation of monitoring technology using Synthetic Aperture Radar (SAR) satellite data in the fields of "construction management," "inspection," and "operation and maintenance (O&M)" as part of OC Global's large-scale infrastructure projects. The aim is to contribute to the achievement of the United Nations (UN) Sustainable Development Goals (SDGs) by providing space-based technologies to address global challenges. Synspec develops and operates its own small SAR satellites and also provides satellite data solutions. The core technology of SAR was developed by the ImPACT program, led by the Japanese Cabinet Office. Synspec aims to build a constellation of 30 satellites by the late 2020s, making it possible to observe any disaster in any part of the world within two hours.

KT SAT Selects DataMiner as Strategic Choice for Kumsan Operations

July 19, 2021 - KT SAT, Korea's leading satellite communication operator, offering services to global customers and partners, has chosen DataMiner as the future-proof end-to-end multi-vendor management system to upgrade their teleport station operation. KT SAT made this strategic decision in order to support their transition towards new technologies while integrating their legacy infrastructure connected through multiple types of protocols – IP, serial, SNMP, API. The flexibility of the system also allowed them to fully customize the interface in Korean. The most important reasons for KT SAT to opt for DataMiner were the innovative nature of the platform, featuring AI-enabled operation, combined with great flexibility. The flexibility to integrate different technologies into one system, but also the flexibility to have user interfaces fitted to their specific needs.

SES Government Solutions Wins USD 14.5 Million Contract to Support Thule Air Base

July 19, 2021 - SES Government Solutions was awarded a contract of USD 14.5 million to support Thule Air Base in Greenland with critical communications capabilities. The SES GS solution leverages C-band technology, which is highly resilient to weather effects, and provides a dedicated reachback beam leveraging single hop connectivity directly to the user site. The SES GS solution also provides redundancy at all levels, to include antennas, uplink and downlink telemetry, ground infrastructure, and restoration capabilities. This award is an example of the company's proven track record of providing reliable services in harsh climate conditions in the Arctic, while ensuring the mitigation of physical antenna degradation. SES GS has been the sole provider of commercial satellite communications to Thule Air Base for over 20 years. It has extensive experience overcoming the challenging conditions of operating in Arctic locations, including the extreme cold-weather environment, unpredictable weather patterns, near-horizon location, and logistical challenges.

AsiaSat Launches SAILAS, New Managed Connectivity Service for Asia-Pacific Maritime Sector

July 16, 2021 - AsiaSat has launched its new managed connectivity service SAILAS, a key component of the company's complete, end-to-end solution to support digital transformation of the Asia-Pacific maritime sector. Powered by AsiaSat's high-performance satellites, including AsiaSat 5, AsiaSat 7 and AsiaSat 9 and the hub infrastructure from its Tai Po Earth Station and regional teleport partners, SAILAS' service will be available in high reliability and availability over a wide area from the Middle East, South Asia to South East Asia; passing through major shipping routes across the Arabian Sea, Indian Ocean, Malacca Strait and the Indonesian archipelagic waters. SAILAS' users will have access to a smart platform to enjoy high-speed email communication, web browsing, voice over IP and other service applications via broadband satellite transmission to facilitate enhancement in business productivity and enrich onboard experience for seafarers and passengers. AsiaSat's professional service team, with broad experience in serving the maritime community will provide engineering, system integration and 24/7 customer support. With proven success in delivering innovative data solutions for the maritime sector, AsiaSat's mission is to enable vessel operators and service providers of different scale a smarter operation in the data age through cost-effective, secure and reliable connectivity empowered by AsiaSat's satellite fleet and teleport hubs at strategic locations.

iSAT Africa and SES Networks to Provide Reliable 4G Services in East Africa via O3b mPOWER

July 15, 2021 - Communities living across the eastern most peninsula of Africa will be able to enjoy 4G services on their mobile phones following a three-year partnership agreement signed by fixed satellite solution and professional service provider, iSAT Africa and SES. The two companies announced today that this new service will be available first via SES's O3b medium earth orbit (MEO) constellation to subsequently migrate and expanded to SES's next-generation MEO system, O3b mPOWER, in 2022. iSAT Africa is well-established in the region for embracing innovative mobile internet connectivity solutions for unconnected rural communities in Africa. Through SES's highly-flexible and scalable O3b mPOWER system that can deliver low-latency high-speed connectivity services from tens of megabits to multiple gigabits per second to a single site, iSAT Africa will be able to quickly scale its network to meet anticipated extensive connectivity demands. The fibre-like connectivity will equip iSAT Africa to enable local mobile operators to deploy 4G services to close the digital divide. iSAT Africa is among the first companies in Africa to sign up for O3b mPOWER.

AWS Announces General Availability of Amazon HealthLake,

July 15, 2021 - Amazon Web Services, Inc. (AWS), an Amazon.com, Inc. company, announced the general availability of Amazon HealthLake, a HIPAA-eligible service for healthcare and life sciences organizations to ingest, store, query, and analyze their health data at scale. Amazon HealthLake uses machine learning to understand and extract meaningful medical information from unstructured data, and then organizes, indexes, and stores that information in chronological order. The result provides a holistic view of patient health. The service leverages the Fast Healthcare Interoperability Resources (FHIR) industry standard format to further enable interoperability by facilitating the exchange of information across healthcare systems, pharmaceutical companies, clinical researchers, health insurers, patients, and more. Amazon HealthLake is a new service that is part of AWS for Health, a comprehensive offering of AWS services and AWS Partner Network solutions used by thousands of healthcare and life sciences customers globally. AWS for Health provides proven and easily accessible capabilities that help organizations increase the pace of innovation, unlock the potential of health data, and develop more personalized approaches to therapeutic development and care. As part of AWS for Health, Amazon HealthLake further facilitates customers' application of analytics and machine learning on top of their newly normalized and structured

data. Doing so enables customers to examine trends like disease progression at the individual or population health level over time, spot opportunities for early intervention, and deliver personalized medicine.

Avanti Communications and Clear Blue Technologies Partner to Deploy Rural Connectivity

July 15, 2021 - Avanti Communications, the leading provider of high throughput satellite capacity across EMEA, today announces a partnership with Clear Blue Technologies International Inc., the Smart Off-Grid™ company, to enable Mobile Network Operators and Telco Tower Companies to deliver rural network coverage to areas across sub-Saharan Africa. Within the next three to five years, the partnership is expected to deliver mobile network coverage to the 400 million people that currently cannot access mobile broadband services. This partnership will accelerate the rural rollout of low-cost connectivity solutions in areas where network coverage and broadband services have been limited or non-existent. Avanti and Clear Blue have already successfully provided these connectivity solutions in significant deployments across Africa's largest economies. Avanti's rural network coverage solution supports 2G, 3G, 4G and Wi-Fi connectivity across Africa. As part of this joint rural deployment effort, Avanti will provide critical, high throughput Ka-band satellite connectivity and VSAT equipment. At the same time, Clear Blue will deploy its smart off-grid solar-powered solutions with remote management and control.

Gilat Received US\$2 Million in Orders for Support of LEO Constellation

July 15, 2021 - Gilat Satellite Networks Ltd. announced today that it received additional orders of US\$2 million for support of gateways of low Earth orbit (LEO) constellations. The orders were received as part of the previously announced contract. Gilat's subsidiary, Wavestream, was chosen as the vendor of choice to supply Gateway Solid State Power Amplifiers (SSPAs) to a leading satellite operator to support the LEO constellation gateways. Wavestream is proceeding according to plan with delivery of orders for its Gateway-Class PowerStream 160Ka SSPAs, designed specifically for networks using wide bandwidth uplinks and high order modulation schemes. Wavestream's SSPAs were selected because of their best-in-class technical performance and their unmatched reliability in harsh environments, best addressing the stringent requirements of non-geostationary orbit (NGSO) constellations installed in remote locations. The high-volume manufacturing of these highly-complex Gateway-class SSPAs is proceeding at an unprecedented production rate, with orders now exceeding 800 Gateway-Class SSPAs with all deliveries expected in the next 12 months.

Intersputnik and RSCC Sign an Agreement on Cooperation in Using Orbit and Frequency Resource

July 14, 2021 - The Intersputnik International Organization of Space Communications (Intersputnik) and Russian Satellite Communications Company (RSCC) signed an Agreement on Cooperation in Using Frequency Assignments in the Geostationary Orbit and Other Satellite Orbits for the Implementation of the Project on the Joint Use of Satellite Capacity. As decided by the joint 49th session of the Board and 23rd session of the Operations Committee of Intersputnik held on 14 May 2021, one of the organization's main tasks at the present stage is the analysis of the possibility of attracting new partners to jointly use frequency assignments to satellite networks and definition of the conditions of cooperation in the joint use of orbit and frequency resource. This task was entrusted to the Intersputnik Directorate headed by Director General Ksenia Drozdova since 15 June 2021. RSCC is one of the 25 national Signatories of Intersputnik, which unites 26 member countries from Europe, Asia, Latin America and South-East Asia. Offering access to the satellite resources of the Russian constellation practically on all continents, RSCC is interested in providing global service to its customers.

QuadSAT's Drone Technology Employed by SES for International Antenna Validation

July 14, 2021 - SES and QuadSAT have jointly performed an 'industry-first' ground segment Satcom Antenna Validation campaign. Using QuadSAT's revolutionary new drone technology, this mission redefines the possibilities for antenna diagnostics within the framework of Industry 4.0. By obtaining accurate antenna performance data from anywhere in the world from Original Equipment Manufacturers (OEMs), SES was able to quickly validate new antenna models to be added to their satellite networks, mitigating the risk of generating interference on their own satellite or adjacent satellites. On behalf of SES, QuadSAT assessed 12 commercial maritime antennas, using its drone-based solution for antenna diagnostics. The innovative technology is deployable in a matter of hours and operates globally. The system is a fully automated drone solution equipped with a unique Radio Frequency (RF) payload. The tests took place at two different sites and enabled SES to investigate the performance of a wide range of antennas supplied by various manufacturers. The speed of QuadSAT's departure from Denmark, operational set-up on-site, to the start of the actual test reflects the simplicity of operation. The data

gathered is fundamental to the collaboration between satellite operators, antenna manufacturers and service providers, but has historically been challenging to obtain. With QuadSAT's solution, the tests could be easily and efficiently performed over a period of just 23 days, including travel and setting up operations at two different sites. This time frame included processing the results, which were subsequently delivered to SES from the test sites.

Yahsat Successfully Commences Trading on ADX

July 14, 2021 - Al Yah Satellite Communications Company PJSC ("Yahsat" or "the Group"), announces the official listing of its shares and the commencement of trading on the Abu Dhabi Securities Exchange (ADX), following the successful completion of its initial public offering (the "IPO" or the "Offering"). The company is now traded under the ticker symbol: YAHSAT. The IPO of Yahsat is a strategically important and landmark transaction for Mubadala and the Abu Dhabi markets. It represents the first ever IPO of a Mubadala subsidiary supported since inception and creates a new platform and route for further value creation. The Offering has led to substantial engagement and interest from high quality, global institutional investors, allowing for increased Foreign Direct Investment into the UAE and paving the way for further interest and investment in similar, future transactions, on top of the high demand and interest from local investors. Through the Yahsat IPO, Mubadala was able to raise AED 2.68 billion by selling 40% of share capital at AED 2.75 per share, resulting in the Group's market capitalisation of approximately AED 6.7 billion. Tranches were oversubscribed by multiple times, indicating strong interest in participating in Yahsat's growth story and its future plans.

SES-led Consortium to Define Luxembourg's Quantum Communication Infrastructure

July 13, 2021 - The Luxembourg's Quantum Communications Infrastructure project (LuxQCI), coordinated by the Department of Media, Telecommunications and Digital Policy (SMC) of the Luxembourg Ministry of State, and supported by the European Space Agency (ESA) and the Luxembourg Space Agency (LSA) under the Luxembourg National LuxIMPULSE programme, will create a secure communications shield against cyber threats based on quantum technology. To design the LuxQCI, Luxembourg has put in place a consortium comprising InCert, itrust consulting, LuxConnect, LuxTrust and the University of Luxembourg (SnT), that is led by SES's fully-owned affiliate SES Techcom. One of the LuxQCI's main functions will be to ensure quantum key distribution (QKD), an ultra-secure form of encryption that uses the principles of quantum mechanics. Enabled via satellites, QKD can secure confidential data, power grids, government communications and digital transactions, including against attacks by quantum computers. Once operational, LuxQCI will guarantee the security of digital transactions and of confidential information transfer over geographically dispersed areas. Early users of the infrastructure will be governmental and institutional authorities and business sectors requiring ultra-secure data transmission. QCI will ultimately evolve into a Quantum Internet, linking quantum processors and sensors and enabling an EU-wide distributed quantum computing and communication capability. The LuxQCI is an integral part of the European Quantum Communication Infrastructure (EuroQCI), an initiative from the European Commission that was officially launched in June 2019, which represents a federation of all the national infrastructures of the 27 EU Member States. Luxembourg was among the first seven Member States that signed this declaration.

RIX Shipmanagement Selects KVH AgilePlans VSAT Connectivity

July 13, 2021 - Global ship operator RIX Shipmanagement Ltd. has chosen KVH's AgilePlans® subscription-based Connectivity as a Service (CaaS) program to supply its vessels with VSAT connectivity. Installations for four vessels have been completed, with plans for an additional 25 through the second quarter of 2022. RIX plans to use a mix of KVH's TracPhone® V7-HTS, TracPhone V3-HTS, and TracPhone V30 systems for its fleet of dry-cargo and multipurpose vessels trading worldwide. Hansael SIA, in Latvia, provided technical and sales expertise to RIX, advising them of the benefits of KVH's AgilePlans service. AgilePlans includes a choice of KVH TracPhone hardware, unlimited email and texting, daily world and national news via NEWSlink™ TV and NEWSlink Print, installation in as many as 4,000 ports and locations, cybersecurity protection, KVH OneCare™ maintenance, no CAPEX, and no commitment, all for one monthly fee. Commercial maritime fleets worldwide are migrating from legacy L-band systems, where slower data speeds are measured in kilobits per second (Kbps) to VSAT services, such as KVH AgilePlans, where faster data speeds measured in megabits per second (Mbps) enable vessels to improve operational efficiency through digitalization. Vessel operators also know that seafarers value fast, reliable connectivity and view it as an important part of crew welfare and life at sea.

New Ka-band Antenna Located at the KSAT Antarctic Station Troll Now Operational

July 13, 2021 - The majority of EO satellite systems continue to use X-band to download their data, but as data collection volumes increase, Ka-band offers high throughput, low latency and a less congested spectrum. KSAT is a first mover within Ka-band and has been exploring the advantages of this higher frequency-band with both commercial operators like Astro Digital as well as institutional users like NASA, NOAA and EUMETSAT. The KSAT polar ground stations have proven to be optimally suited for operating Ka-band antennas. Having a higher sensitivity to weather conditions and especially precipitation, located in dry areas is an important prerequisite for success. The new KSATlite antenna in Antarctica is operated as an integrated part of the KSATlite network as well as being a part of the fully operational KSAT polar Ka-band network consisting of 6 polar multi-mission antenna systems (4 Tri-band and 2 Dual-band). With 2 additional antennas being installed in 2021, the KSAT Polar Ka-band network will number 8 antennas by end of the year. The network is providing operational services to JPSS from Svalbard and Troll and will support EUMETSAT 2nd generation. It will also support NASA's NiSAR and PACE missions from our stations in Svalbard, Antarctica and Punta Arenas. The KSAT ground network consists of more than 200 antennas located at 26 sites world-wide.

LEOcloud and Ramon.Space Partner to Build Satellite-Hosted Cloud Edge Computing Capabilities

July 13, 2021 - LEOcloud and Ramon.Space have entered into a partnership to develop satellite-hosted cloud edge computing capabilities for commercial, government and military customers. The capabilities will provide dynamic, scalable virtual resources supporting a container operating environment. LEOcloud's Space Edge Low Earth Orbit (LEO) constellation will enable a global reach of cloud edge computing services for their customers. Edge computing brings the workload computing resources as close as possible to the sources and users of data with the competitive and mission-critical advantages of latency, security, availability and sovereignty. End users can operate their services or application workloads in a seamless satellite-hosted hybrid cloud environment. LEOcloud's point and click interface for the end user will enable the reservation of dynamic and scalable virtual Space Edge computing resources as well as integrated resources such as ground station services, satellite data suppliers and other 3rd party applications and services.

Panasonic Avionics Switches on XTS Connectivity over China

July 13, 2021 - Panasonic Avionics Corporation (Panasonic Avionics) has completed the latest phase in its continuing investment in in-flight connectivity with the activation of extreme high throughput (XTS) satellite coverage over China and the Asia Pacific region. The beam over Asia Pacific from APSTAR 6D, Panasonic Avionics' first XTS satellite, has gone live through teleports in Beijing, Kuala Lumpur, Hong Kong, and Perth. This will enable airlines based in the region and others flying over it to benefit from its greatly enhanced satellite capacity. APSTAR 6D went into its first stages of operation in early 2021 and is now providing airlines flying across Asia Pacific with multiple gigahertz of new Ku-band capacity over China, including high-density air traffic routes across East Asia using XTS spot beams. APSTAR delivers 90 beams across the whole region, and 50 Gbps in capacity. The satellite is an integral part of Panasonic Avionics' third-generation communications (Gen-3) network of high speed, high bandwidth Ku-band satellites. The network, covering over 99% of all routes, places capacity where it is most needed to meet the growing needs of airlines and their passengers. Panasonic Avionics' Gen-3 network supports improved airline and passenger experiences including faster internet, video streaming, VoIP applications, improved picture quality and broader channel choice, 4G phone services, and greater bandwidth for crew applications.

ThinKom Unveils New Q/V-Band Phased-Array Satellite Antennas

July 13, 2021 - ThinKom Solutions today announced development of a new phased-array user terminal specifically designed for operation in the higher millimeter-wave (MMW) frequency bands for evolving next-generation communication satellites. The new low-profile antenna, based on ThinKom's patented VICTS (Variable Inclination Continuous Transverse Stub) technology, will operate in the Q- and V-band frequencies (37.5-42.5 GHz and 47.2-51.4 GHz). These bands have been designated for adoption by major satellite operators in low-, medium-, geostationary and highly elliptical orbits (LEO, MEO, GEO and HEO). Similar Q-band MMW antennas have already been built and on-satellite tested by ThinKom for Q-band aeronautical and ground-mobile use. ThinKom's full-duplex terminal is 75 cm square and less than 10 cm in height, weighing less than 23 Kg and requiring less than 100 watts of prime power; yet providing the same functionality as two separate 50-cm diameter stabilized parabolic dish antenna radome enclosures.

ASECNA Teams up with Thales Alenia Space and NIGCOMSAT to Continue the Development of SBAS Services for a Broader Range of Business Sectors in Africa, Backed by Geoflex

July 9, 2021 - The Agency for Air Navigation Safety in Africa and Madagascar (ASECNA), Nigerian Communications Satellite Ltd. (NIGCOMSAT) and Thales Alenia Space are working together to accelerate the development of additional satellite services provided by ASECNA's A-SBAS (Satellite-Based Augmentation System) for Africa and the Indian Ocean to deliver precise point positioning (PPP, CNES/Geoflex) and danger warnings for a wide range of applications in Africa. The three partners successfully demonstrated the additional services provided by A-SBAS on July 7 and 8, 2021, by calling on the SBAS signal they have broadcast over the Africa & Indian Ocean (AFI) region since September 2020 to provide the first SBAS open service in this part of the world via the NigComSat-1R satellite. This trial follows successful flight demonstrations in January 2021 in Lomé and the following June in Douala. This approach showed the system's ability to achieve positioning accuracy to within centimeters across the entire African continent. A world first, this satellite service paves the way for applications in a broad range of sectors, including precision agriculture, land and maritime transport, rail safety, drone navigation, mapping and surveying.

Hellas Sat Successfully Completes Live Demonstration of 5G Satellite Backhauling Capabilities

July 8, 2021 - Hellas Sat has successfully completed a live demonstration of the provision of 5G network to remote areas by backhauling the connection between a 5G Core Network and a 5G gNB through Hellas Sat 3, a geostationary telecommunication satellite, which was built by Thales Alenia Space on the Spacebus 4000 C4 platform. The demonstration took place during an event that marked Hellas Sat 20-year anniversary, that was organised in partnership with KT-SAT, ST Engineering iDirect, Thales Alenia Space, and Vodafone Greece to showcase the satellites' role in the 5G ecosystem to broaden coverage. Using satellite communication backhaul links, the satellite was fully integrated into the 5G network and received 5G transmissions from the Earth and then delivered these to remote areas. This technology enables increased coverage in areas where traditional backhauling technologies (wired, fiber, radio beams) are not suitable for technical and/or economic reasons. The connection of the Hellas Sat 3 satellite to the 5G network has been enabled by the use of Thales Alenia Space and ST Engineering iDirect hub and modem equipment, as well as Vodafone's 5G licensed spectrum.

Telenor Group Sells Telenor Myanmar to M1 Group

July 8, 2021 - Telenor Group has entered into an agreement to sell 100 percent of its mobile operations in Myanmar to M1 Group for a total consideration of 105 million USD (approximately 900 million NOK), of which 55 million USD (approximately 470 million NOK) is a deferred payment over five years. The transaction corresponds to an implied enterprise value of approximately 600 million USD (approximately 5.2 billion NOK). M1 Group will acquire all the shares in Telenor Myanmar and continue the current operation. On 4 May, Telenor Group announced an impairment of Telenor Myanmar. Telenor underlined at the time that the operations in Myanmar continued, and that the future presence would depend on the developments in the country and the ability to contribute positively to the people of Myanmar. Further deterioration of the situation and recent developments in Myanmar form the basis for the decision to divest the company. In the present situation it has not been possible for Telenor to conduct an ordinary sales process. Since operations started in 2014, Telenor's funding to Myanmar has been around 5.3 billion NOK. After turning cashflow positive in 2017, Telenor Myanmar has distributed approximately 3.2 billion NOK in dividend. With effect from second quarter of 2021, Telenor Myanmar will be treated as an asset held for sale and discontinued operations. The gain/loss calculation arising from the transaction will be impacted, inter alia, by the accumulated translation differences related to the Myanmar operation and will be finally determined at closing. The transaction is subject to regulatory approvals in Myanmar.

GMV Supplies the Ground Segment of Hispasat's New Generation of Satellites

July 7, 2021 - GMV has signed a series of ground-segment supply contracts for Hispasat's Amazonas Nexus satellite, which will replace Amazonas 2 in the orbital position 61° West and enhance its forerunner's capabilities. The contract as a whole includes supply of the control center and flight dynamics system, a new ground station in Río de Janeiro for the Amazonas Nexus satellite, a new satellite tracking system and sundry ground equipment, plus a new control and management system for all Hispasat's ground stations. Amazonas Nexus ushers in a new generation of Hispasat satellites and will open up new markets and win new clients, providing high-capability air- and sea-transport mobility services, among others. It will continue to cater for Hispasat's current Amazonas 2 clients. The new upgraded satellite will give coverage to the whole American continent plus the north and south Atlantic corridors (areas of busy air- and sea-traffic) and Greenland, providing state-of-the-art Ku-band telecommunication services. It also includes Ka

band capability to streamline gateway-satellite communications. This will multiply the total onboard capability available for commercial use while also fine-tuning capability unit cost in comparison with traditional satellites. The recently awarded contract was won on the strength of GMV's vast experience in supplying systems of this type based on GMV's inhouse line of operational products. Pride of place here goes to the real-time telemetry and telecommand processing product Hifly and the flight dynamics system FocusSuite. Other GMV products will also be supplied, like Magnet for management and control of ground stations.

netTALK Maritime Announces Partnership with Inmarsat to Provide Communication Services for the Canadian Coast Guard

July 7, 2021 - netTALK Maritime announces its partnership with Inmarsat to provide a communication system for Canadian Coast Guard lighthouses. Inmarsat's Global Xpress (GX) solution provides lighthouse keepers with reliable, high throughput data communications that drive job efficiency and greatly improve morale and welfare. netTALK Maritime is a full-service communications provider for maritime deployments on cruise lines, serving over one million end users worldwide. Their streamlined maritime system is currently deployed on mass-market cruise lines around the world. It enables passengers to communicate directly with one another and cruise ship staff to send alerts and can be seamlessly adopted for other use cases as deployed with the Canadian Coast Guard lighthouses. Inmarsat regularly works with customers representing governments, but this will be netTALK Maritime's first contract in this area. The partnership will combine netTALK Maritime's communication system with Inmarsat's satellite expertise, delivering remote communications and connectivity to government operators. Inmarsat has tested netTALK's communication system since March 2020 to deliver global safety communications in the most challenging locations. Inmarsat's GX service provides a high bandwidth satellite data solution that allows lighthouse keepers to access their Cisco AnyConnect VPN connection to the Canadian Coast Guard network. Partner agencies can use GX to upload webcam images, weather data, etc. as well as VoIP that allows lighthouse keepers to make phone calls.

Maxar Secures WorldView Legion Commitment Under Expanded Agreement with International Defense and Intelligence Customer

July 7, 2021 - Maxar Technologies announced a contract for WorldView Legion satellite constellation capacity through an expanded agreement with a key international defense and intelligence customer. The multi-year, \$35 million contract extends the customer's ability to directly task and download 30 cm-class satellite imagery to its ground station from Maxar's current constellation under the Direct Access Program. This program access enables defense, intelligence and commercial customers to access the world's most advanced Earth imaging satellites, with encrypted downlinks, committed availability and data distribution rights that fit mission needs. The contract will also provide direct access to Maxar's next-generation WorldView Legion satellites once they enter operations, and it includes to Maxar's 3D data suite, created from the company's industry-leading, highly accurate satellite imagery.

WORK Microwave's Ka- and Q-/V-Band Converters Support Eutelsat's Next-gen KONNECT VHTS

July 7, 2021 - WORK Microwave, a leading European manufacturer of advanced satellite communications equipment, today announced that it has signed a new multimillion-dollar agreement with Eutelsat, one of the world's leading satellite operators with a powerful fleet of satellites serving users across Europe, Africa, Asia, and the Americas. Eutelsat is using WORK Microwave's Ka- and Q-/V-band converters on its ground segment equipment during the next phase of its connectivity strategy, offering ultra-high data throughput via its KONNECT VHTS satellite. Eutelsat's high throughput satellites are key to bridging the digital divide as they are optimized to deliver affordable and high-quality broadband to consumers, professionals, and companies beyond the range of fiber and ADSL. With 230 spot beams and an overall capacity of about 500Gbps, KONNECT VHTS will provide two-way broadband connectivity across Europe and beyond. KONNECT VHTS will be a game changer, enabling Eutelsat to provide fiber-like connectivity to end users at fiber-like pricing. Supporting the full ITU bandwidth range of the Ka- and Q-/V-bands, WORK Microwave's converters offer a rich feature set and unparalleled performance. Leveraging the converters, Eutelsat can achieve excellent phase noise, gain flatness, spurious response, and group delay.

NEC Announces New Multi-carrier Radio Solution to Address Higher Capacity Demands for 5G Networks

July 7, 2021 - NEC Corporation, a leading provider of wireless solutions, today announced the release of new iPASOLINK IAP3 series High-Power Outdoor Units (ODU) and a next generation Outdoor Branching (BR) Combiner (OBC2) to help answer the challenges operators face in increasing 5G network capacity

and accelerating deployment needs. NEC's iPASOLINK ODUs are well-known and trusted for their reliability and market-leading performance by network operators that require high availability and high capacity operation over a wide range of challenging environmental conditions. The new IAP3 series ODU's continue to deliver high quality, and now feature significantly improved RF performance in an energy efficient, compact, lightweight housing. The new IAP3 delivers up to 5dB of transmission power improvement in the higher modulations, crucial to operators looking for high capacity links with high availability performance. The IAP3 supports the 6 to 23 GHz bands and channel widths up to 112 MHz with adaptive modulation (AMR) support up to 4096 QAM. Automatic transmitter power control (ATPC) is enabled on the IAP3, ensuring efficient operation and that all standard radio configurations are supported, including Cross Polarization Interference Cancellation (XPIC) and space diversity operation. The IAP3 is also fully supported by the new N-on-1 hybrid coupler.

Advantech Wireless Technologies Delivers New State-of-the-Art Ultra-high Power SSPA System

July 7, 2021 - Advantech Wireless Technologies a global leader in satellite broadband communications, announced today that it has delivered its 8.5kW Ultra-High Power Modular Summit II Solid State Power Amplifier (SSPA) System to a major satcom system integrator. The newly designed Summit II Systems consist of four, eight or sixteen high-power SSPAs packaged in ruggedized, outdoor enclosures and integrated into a single frame structure that includes combiners, loads, power distribution and M&C – perfectly suited for fixed and full motion antenna installations. Modular architecture with 1:N built-in redundancy and field replaceable amplifiers minimizes downtime, resulting in the highest service availability in the industry. Advantech's Summit II systems are designed using the latest gallium nitride device technology and operate over the latest Controlled Area Network (CAN) BUS M&C Protocol for maximum speed and reliability. Summit II is available in C, X, Ku and S-band architectures.

Cognitive Space Selected for the AWS Seraphim Space Accelerator

July 6, 2021 - Cognitive Space has been selected to participate in the Amazon Web Services (AWS) Space Accelerator, a business support program for startups seeking to use AWS to help solve the biggest challenges in the space industry. This opportunity will support Cognitive Space efforts to revolutionize satellite operations by bringing the power of artificial intelligence and machine learning to mission operations and collection planning. Cognitive Space provides New Space organizations with sophisticated tools for optimizing revenue and performance yield as their satellite constellations grow and scale. New for 2021, the four-week AWS Space Accelerator curriculum provides hands-on AWS Cloud and technical training, mentorship, coaching, and business support in collaboration with Seraphim, one of the world's leading investment groups focused exclusively on the space industry, who will provide business development and investment guidance. Cognitive Space will rely on AWS Cloud infrastructure for its own Space-focused software products – including licensed services, underlying platform architecture, development & test environments, and AI/ML training and processing workloads. Cognitive Space will take advantage of AWS services for scalability, cost-effectiveness, security, reliability, and global reach.

Azercosmos Partners with Chinese Satelliteherd on Satellite Ground Station

July 2, 2021 - Azerbaijan Satellite Operator Azercosmos announced today it is partnering with Satelliteherd, a high-tech company and one of the leaders of the commercial space industry in China. Under the long-term agreement, Satelliteherd has installed a 4.2 metre antenna at Azercosmos' Ground Station (AGS), located in the Absheron peninsula. This antenna will enable Satelliteherd in monitoring satellite health, as well as processing data transmitted, and controlling telemetry between satellites and satellite networks operating in space. With extensive experience in space engineering, Satelliteherd will provide a number of reliable and modern TT&C (Telemetry, Tracking and Command) services for receiving accurate signals from satellites thanks to the antenna installed in Azercosmos' Ground Station.

Cobham Launches SATCOM New SAILOR 7222 VHF DSC Class A for Global Maritime Industry

July 2, 2021 - Cobham SATCOM, the market-leading provider of radio and satellite communications solutions to the maritime industry, has today announced the launch of SAILOR 7222 VHF DSC Class A. A next generation SOLAS classified maritime CLASS A VHF radio with new performance features, SAILOR 7222 VHF DSC Class A will raise safety standards in the maritime industry by improving regular and critical communications at sea. SAILOR 7222 VHF DSC Class A is reliable, highly resilient, and easy to operate on any vessel type in any situation, delivering clear communications that could make the difference between a non-event and a major incident on board. The radio exceeds the standards set by IMO regulations for GMDSS Class A VHF, the new Bridge Alert Management IMO resolution MSC.302(87)

coming into force 29 August 2021, as well as IEC 62923-1 & IEC 62923-2. It comes with a new and innovative user-friendly 5.5" TFT touch-screen interface that further streamlines workflows, optimizing operational safety and efficiency. This new feature is critical as it ensures the display can be read day or night regardless of the light conditions on the bridge.

BROADCAST

SES Enters Multi-Transponder Agreement with NewSpace India Limited via SES-8

July 29, 2021 - SES announced today that it had entered into a multi-transponder agreement for its SES-8 satellite with NewSpace India Limited (NSIL), a Central Public Sector Enterprise (CPSE) under Department of Space (DoS) based in Bengaluru, India. The nine-transponder capacity agreement on SES-8 at 95 degrees East will be used to support India's thriving direct-to-home (DTH) market. Deepak Mathur, Executive Vice President of Sales at SES Video, said, "Satellite TV and the programmes it brings hold a very important role for Indian TV viewers. We are honoured to be able to provide continued support and satellite capacity needed to support DTH operations in the country in collaboration with NSIL."

France 24 Extends Distribution Service on AsiaSat 5

July 27, 2021 - France 24 has renewed a multi-year service agreement with AsiaSat to continue distribution of France 24's HD and SD television services in the Asia-Pacific on AsiaSat 5. This extended agreement reaffirms their continued commitment to bringing top-quality international news programmes from France to Asian audience. The news services, transmitting in free-to-air, include France 24's English HD TV channel, English SD and French SD TV channels, addressing both French and English speaking viewers across the region. The partnership of France 24 and AsiaSat began with the successful launch of France 24's English-language news channel on AsiaSat 5 in 2009, and subsequently extended to the distribution of a French channel in 2010 and English HD service in 2016. Benefitting from AsiaSat 5's exceptional audience penetration, France 24 has built a strong presence in Asia, with a massive access to more than 88 million TV households via free-to-air TV networks and pay TV platforms, and over 675,000 hotel rooms in 27 Asia-Pacific countries. France 24 offers Asian viewers round-the-clock news and analysis from a French perspective, featuring award-winning special reports and magazines, as well as promoting the French vision with high quality content covering the French "art de vivre", news of business updates, trends and technology, and sports in different continents.

New TV Channel BILD Available in HD via SES on ASTRA 19.2 Degrees East

July 21, 2021 - WeltN24, subsidiary of Axel Springer will be launching a new free-to-air high-definition (HD) channel - BILD - in August via SES's prime ASTRA neighbourhood 19.2 degrees East in a new multi-year capacity agreement, both companies announced today. The new agreement will continue to see SES broadcast Welt and N24 Doku, two channels that are owned by WeltN24, the subsidiary of Axel Springer SE. BILD TV will be the third TV channel to be distributed via SES's ASTRA satellites. Additionally, SES will provide signal uplink and playout services for the latest news channel. The new free-to-air TV channel BILD will be available in HD via SES's prime TV neighbourhood of ASTRA 19.2 degrees East at frequency 10.964,25 MHz as of 22 August. The TV channel BILD will focus on the live broadcasting segment BILD LIVE, which will cover news and current affairs from Monday to Friday, from 9:00 am to 2:00 pm. On Sunday, BILD LIVE will broadcast sports content from 9:00 am to 1:00 pm. BILD LIVE can be viewed in parallel on N24 Doku, WELT's timeshift channel. The programming of BILD will continue to expand with documentaries, reports, live shows and talk shows on politics, sports and entertainment among many other topics.

Spacecom and Yes DTH Extend Service Agreement for Additional Two Years on AMOS Satellites

July 12, 2021 - Spacecom has signed a two-year extension deal with D.B.S. Satellite Services, operator of Yes DTH in Israel. The deal, worth USD 14 Million, will continue the DTH's operations from the AMOS-7 and AMOS-3 satellites at Spacecom's 4°W orbital hotspot. With this agreement, Yes' order backlog increases to USD 100 Million. The extension by Yes represents its vote of confidence in Spacecom's AMOS satellites, services, advanced technologies, and leadership team. The agreement with Yes has an additional two potential extensions of six-months each, starting at the end date of the new agreement. If realized, the extensions will result in an additional USD 7 Million of revenue for Spacecom. Spacecom also reported the extension of its lease agreement with AsiaSAT, the owner of the AMOS-7 satellite, for an additional two years until 2024. The annual new and reduced lease fee is USD 14 Million. The above continue the company's recent released transactions including a USD 38 Million extension of services with the Government of Israel and a USD 6 Million contract with an African MNO, among other news. Also, the

company reported last month on current negotiations with 4iG Plc., a Hungarian information technology and telecommunications company (Budapest Stock Market: 4iG Nyrt.), for the latter to take a majority 51 percent stake in the Israel-based satellite services company. 4iG recently won a contract to build a Hungarian national satellite.

Magyar Telekom's T-Home DTH, Member of Deutsche Telekom Group, Extends Agreement with Spacecom Securing Future Service on AMOS-3 Satellite

July 5, 2021 - Spacecom announced that T-Home DTH (direct-to-home) service, the leading DTH provider in Hungary and a brand of Magyar Telekom, the principal provider of telecom services in Hungary, has signed a follow-on extension contract with Spacecom. The new agreement secures services until the end of 2024 and is worth a minimum USD 8.6 Million. The T-Home DTH platform currently broadcasts over 160 channels throughout Hungary including over 30 in HD via the AMOS fleet at the 4°W orbital position. As the country's largest TV broadcasting service, it reaches over 33% of Hungarian households. Magyar Telekom launched the platform in 2008. Hungary is a key Spacecom market. Last month, the company reported it is negotiating with 4iG Plc., a Hungarian information technology and telecommunications company, for the latter to take a majority 51 percent stake in the Israel-based satellite services company.

LAUNCH / SPACE

Double Success for Ariane 5: Satellites Star One D2 and EUTELSAT QUANTUM Placed in Orbit

July 31, 2021 - On Friday, July 30, between 09:00 and 10:30 p.m. UTC, the Ariane 5 VA254 flight successfully placed two satellites in orbit from the Guiana Space Center (CSG): Star One D2, built by Maxar Technologies for Brazilian operator Embratel, and EUTELSAT QUANTUM for Eutelsat, developed with Airbus Defence and Space and the European Space Agency (ESA). Star One D2 is a high-capacity, multi-mission satellite with Ku-, Ka-, C- and X-band transponders, that will enable it to expand broadband coverage to new regions in Central and South America and add an updated X-band payload for government use over the Atlantic region. Built on Maxar's proven 1300-class platform at the company's Palo Alto, California, manufacturing facility, Star One D2 will improve access to high-quality services, serving the parabolic fleet in Brazil, Pay TV, cell phone backhaul, data, video and Internet for corporate customers and government agencies. The EUTELSAT QUANTUM satellite was developed in the framework of a public-private partnership between the European Space Agency (ESA), the operator Eutelsat and Airbus Defence and Space. With its configurable software-based design, EUTELSAT QUANTUM will be the first universal satellite in the world that can be repeatedly adjusted to the customer's requirements at any time. It is equipped with electronically steerable receiving antennae and operates in Ku-band with eight independent reconfigurable beams. This configuration allows the operator to reconfigure in-orbit the radio-frequency beams over the coverage zones, providing unprecedented flexibility in data, government and mobility services.

Rocket Lab Successfully Launched Satellite to Orbit for the United States Space Force

July 29, 2021 - Rocket Lab has successfully launched a research and development satellite to orbit for the United States Space Force (USSF). The mission was Rocket Lab's fourth launch for the year and its 21st Electron mission overall. The mission, named 'It's a Little Chile Up Here', launched from Rocket Lab Launch Complex 1 on New Zealand's Mahia Peninsula at 06:00 UTC / 18:00 NZT on July 29th. A single Air Force Research Laboratory-sponsored demonstration satellite called Monolith was deployed to low Earth orbit by the Electron launch vehicle in Rocket Lab's second mission for the USSF. Monolith will demonstrate the use of a deployable sensor, where the sensor's mass is a substantial fraction of the total mass of the spacecraft, changing the spacecraft's dynamic properties and testing ability to maintain spacecraft attitude control. Analysis from the use of a deployable sensor aims to enable the use of smaller satellite buses when building future deployable sensors such as weather satellites, thereby reducing the cost, complexity, and development timelines.

Kleos Establishes Partnership with Japan Space Imaging Corporation for Promotion in Japan

July 29, 2021 - Kleos Space S.A. has established a partnership with Japanese based Japan Space Imaging Corporation (JSI) to support Kleos' geolocation data promotion in Japan. Under the agreement, Kleos' RF geolocation data will enhance Japanese customers in their operations, such as defense of the homeland, and identification of illicit activities in territorial and international waters. Acting as Kleos' promotional partner, JSI will provide direct tactical and promotional support. Kleos has successfully launched its first two satellites clusters, targeting a constellation of up to 20 clusters. The Kleos Scouting Mission (KSM1) launched into a 37-degree inclination in November, providing coverage over key areas of maritime interest

including the South China Sea and Strait of Hormuz. These demonstrator satellites have completed commissioning and are delivering test data to early adopter customers. Kleos launched its second cluster of four satellites, the Vigilance Mission (KSF1), at the end of June. Launched into a 525km Sun Synchronous orbit from Cape Canaveral in Florida, the four Polar Vigilance satellites are in currently progressing through the Launch and Early Orbit Phase (LEOP) and commissioning phase.

Astroscale Advances On-Orbit Servicing Technologies with Mitsubishi Heavy Industries and the Government of Japan

July 27, 2021 - Astroscale Holdings Inc. announced Astroscale Japan Inc. has signed a MoU with Mitsubishi Heavy Industries, Ltd. to cooperate on active debris removal and other projects for improving space environmental protection, marking the first collaboration between Astroscale and a launch services provider. Astroscale Japan has also been selected by the Government of Japan's Ministry of Economy, Trade, and Industry (METI) to research and develop robotic hand and arm technologies that can be affixed to spacecraft to perform complex servicing activities in orbit and in lunar environments. The collaboration with Mitsubishi Heavy Industries will leverage Astroscale's on-orbit servicing technologies and Mitsubishi Heavy Industries' launch vehicle manufacturing and launch services capabilities to cooperate on the technical aspects required to advance sustainable space operations. Initial efforts will include discussions and development of debris removal methods for upper stages. The proposal from METI to develop robotic hand and arm technologies is in response to the growing on-orbit servicing market to extend the life of satellites, reducing operating costs for satellite operators and mitigating the creation of further debris. Astroscale is one of two companies selected and the objectives of the three-year contract, budgeted up to USD \$2.5 million for the Japanese fiscal year (April 2020 to March 2021), are to research and develop the technologies related to robotic hands and arms, autonomous control, and interfaces to replace robotic hands. The project will also analyze on-orbit servicing market and standardization trends, reflect them into the development plan and provide recommendations for standardization. Robotic technology is fundamental to on-orbit servicing activities and is expected to play a key role in base construction activities on the lunar surface for the Artemis space exploration program.

Anuvu Announces High Performance MicroGEO Satellite Constellation

July 27, 2021 - Anuvu will launch the first Anuvu Constellation in partnership with next-generation satellite manufacturer Astranis. Anuvu and Silicon Valley-based Astranis are targeting launch for the first two MicroGEO High Throughput Satellites (HTS) in early 2023, with six more to follow. At one meter cubed and under 400kg, Astranis satellites can be built in months, not years. Both satellites of the Anuvu Constellation are dedicated to Anuvu's aviation and maritime customers and will provide high-performance connectivity over North America and the Caribbean. The Anuvu Constellation will complement the company's existing connectivity infrastructure and provide a hybrid network across orbits that delivers optimized solutions to customers.

Orbital Express and GK Launch Services Signed a Contract for a 3U CubeSat Launch

July 22, 2021 - Orbital Express and GK Launch Services signed a contract for the launch of a 3U CubeSat aboard the Russian Soyuz-2.1a LV with the Fregat upper stage in 2022. The OE-1 satellite is designed for technological testing of control system algorithms developed by Orbital Express. The spacecraft will also have the equipment for technological experiments for the company's commercial customers. Among them is the Orbital Server implemented jointly with the RuVDS company. Orbital Express LLC was established in 2020 by a group of Russian engineers and specialists with experience of work in state rocket and space enterprises and private companies. Orbital Express develops an ultra-small kick, or upper, stage to ease the launch of smallsats: nano- and micro-satellites and payloads. The kick stage is supposed to be launched on the launchers of Roscosmos State Corporation or Russian private space companies. Since 2021, Orbital Express has been a resident of the Skolkovo Foundation and takes part in the technology competition of the Aeronet Group of the National Technology Initiative in the area of the Development of an Upper Stage for Small Satellites.

ESA Advances Vega Rocket Evolution beyond 2025, with Care to Environmental Sustainability

July 21, 2021 - ESA will further increase the competitiveness and environmental sustainability of Europe's Vega launch system beyond 2025 through a contract signed with Avio in Italy. Vega operates from Europe's Spaceport in French Guiana to launch light satellites to one or multiple orbits in a single launch. This contract takes Vega a step further and marks the start of a new phase in preparation of a new Vega launch vehicle called Vega-E, which will make extensive use of Vega-C building blocks. The objective with Vega-E is to further increase the competitiveness and performance of Vega-C – which is planned to have its first

flight in 2022. This will increase its flexibility in terms of payload mass and volume and reduce the launch service cost and globally the cost of launch per kilo offered in the market. The key for achieving these objectives is the use of new technologies for a completely new upper stage, featuring a new low-cost liquid-fuelled engine.

ESA's Boost! Fosters New Launch and In-orbit Services with D-Orbit

July 20, 2021 - D-Orbit UK will offer an end-to-end service. This will include customer payload integration on its range of satellite dispensers, D-Orbit's own ION satellite carrier or third-party dispensers, launch and deployment into orbit using primarily UK-based launch services. D-Orbit's ION Satellite Carrier is a flexible in-orbit transportation system for CubeSats and microsatellites. It can accurately place payloads where they need to be in orbit thanks to its inbuilt orbital propulsion system. This service project will increase opportunities for small payloads and satellite constellations to access space and will foster new partnerships in the UK and around Europe. ESA's Boost! contract with D-Orbit nurtures a new commercial space transportation service and enriches launch opportunities tailored to the thriving small satellites market. This will stimulate the European economy and space commercialisation, in line with ESA's Agenda 2025. D-Orbit will establish its satellite assembly, integration and testing facility at Spaceport Cornwall Centre for Space Technologies, while working with a wide range of launch service providers operating from the UK, including Virgin Orbit and Skyrora, but also plans to collaborate with other operators launching from other spaceports in Europe. In particular, D-Orbit is creating close ties with the Atlantic Spaceport Consortium (ASC) in the service project supported through this Boost! contract. The objective is to demonstrate operational feasibility. This, in turn, can contribute to further developing the space ecosystem on the island of Santa Maria, the Azores, Portugal.

EarthDaily Analytics Announces Timeline for the Launch of Next Generation Satellite Constellation

July 20, 2021 - EarthDaily Analytics Corp. announces the timeline for the launch of the company's new constellation of earth observing satellites. The EarthDaily satellite constellation will significantly enhance geospatial analytics capabilities in agriculture, forestry, environment, financial services, and defense and intelligence, among many other verticals. Construction of the new generation of satellites will begin in July 2021, with launches scheduled in 2023. The new satellites will collect scientific-grade imagery of the planet in a unique combination of 21 spectral bands, many of which will be 5-meter resolution. The constellation will have an expected lifespan of over 10 years. In addition to the timeline, EarthDaily Analytics has announced the formation of our Foundational Partnership Program (FPP), a pre-launch opportunity for customers to become early-adopter strategic partners in the EarthDaily Satellite Constellation program.

Thales Alenia Space to Provide the First Two Pressurized Modules for Axiom Space Station

July 15, 2021 - Thales Alenia Space and Axiom Space of Houston, Texas (USA), have signed the final contract for the development of two key pressurized elements of Axiom Space Station - the world's first commercial space station. Scheduled for launch in 2024 and 2025 respectively, the two elements will originally be docked to the International Space Station (ISS), marking the birth of the new Axiom Station segment. The value of the contract is 110 Million Euro. Axiom Station will serve as humanity's central hub for research, manufacturing and commerce in Low Earth Orbit (LEO), expanding the usable and habitable volume of the ISS, attached to the ISS Node 2 module, built also by Thales Alenia Space. When the ISS is decommissioned, the Axiom modules will detach and operate as a free-flying, next-generation commercial space station, a laboratory and residential infrastructure in space, that will be used for microgravity experiments in-space manufacturing, critical exploration life support testing, and hosting both private and professional institutional astronauts. Axiom Space Station will be the cornerstone of a permanent, prosperous human presence and a thriving network of commercial activity in LEO, enabling new advances both on Earth and further out in space. The first two elements to be launched will accommodate up to 4 people each.

Astranis Started Building its Next Four Small Geostationary Communications Satellites

July 15, 2021 - Astranis announced today that it has started to build four new small geostationary communications satellites, three of which are already spoken for under signed deals with new, yet-to-be-announced customers. To kick off the manufacturing of these four satellites, Astranis has placed orders with many of its major component suppliers, committing over US\$30 million to start procuring long-lead hardware, confirm delivery dates, and accelerate timelines. The list of suppliers includes trusted aerospace vendors L3 Harris Technologies, RUAG Schweiz AG, Aitech Systems, Kongsberg Defense and Aerospace AS, and Moog, Inc. This next production block of Astranis satellites includes an upgraded payload that drives

higher throughput and various bus improvements that extend satellite lifetime. In total, Astranis expects these satellites will offer 15 percent greater lifetime and 20 percent greater throughput than their first-generation model, without increasing satellite hardware cost.

Whalers Way Orbital Launch Complex Approved by the Australian Space Agency

July 14, 2021 - Australia is one step closer to reaching the stars with Pad 1 at Southern Launch's Whalers Way Orbital Launch Complex being approved by the Australian Space Agency. Whalers Way is planned to host satellite launches into orbit around the Earth's poles and support the growing Internet of Things (IoT), Earth Observations (EO) and space communications industries that supports improved farming, water management and logistics operations worldwide, setting South Australia up to start capturing part of the \$5.5B global space launch market. The Complex, located on the tip of the Eyre Peninsula in South Australia, is set to transform Port Lincoln and South Australia into a vibrant space hub and will attract space industry related jobs and growth to the region.

Spire Awarded Contract for Earth Observation Data

July 14, 2021 - Spire Global, Inc. has announced the continuation of its participation in NASA's Commercial Smallsat Data Acquisition (CSDA) Program with a six-million-dollar contract extension. The contract continuation, Task Order 6 (TO6), is a subscription data solution that includes radio occultation (RO) data, grazing angle GNSS-RO, total electron content (TEC) data, precise orbit determination (POD) data, soil moisture and ocean surface wind speed GNSS-Reflectometry data, and magnetometer data. This data will be available to all federal agencies, NASA-funded researchers and, more broadly, to all U.S. Government-funded researchers for scientific purposes. Under CSDA Program TO6, Spire will deliver a comprehensive catalog of data, associated metadata, and ancillary information from its Earth-orbiting small-satellite constellation. The Company operates its constellation in low Earth and collects upwards of 10,000 radio occultations per day with consistent global coverage. For TO6, Spire will provide rolling access to 12 months of radio occultation data with a 30-day latency. This data will be archived and maintained by NASA under the CSDA Program's SmallSat Data Explorer (SDX) database.

Yahsat Boosts Thuraya's Next Generation Capabilities

July 13, 2021 - Airbus has been selected by Al Yah Satellite Communications Company (Yahsat), the UAE's leading global satellite operator, to build Thuraya 4-NGS, the next generation mobile telecommunications system that will drive the continued advancement of Thuraya's L-band business. Thuraya 4-NGS will deliver higher capabilities and flexibility while increasing capacity and coverage across Europe, Africa, Central Asia and the Middle East, enabling next generation mobility solutions for all customer segments, including defense, government and enterprise. This is a major milestone in Yahsat's commitment towards transforming Thuraya and rolling out its next-generation system, which entails a complete overhaul of its space and ground platforms, enabling a new set of services, products and solutions, across a greater coverage area. The new capabilities will drive leadership across many strategic product lines, such as maritime, IoT, and data solutions offering a wide spectrum of throughput capabilities and the highest speeds available in the market, while reinforcing Thuraya's strengths in the MSS voice market. Thuraya's next generation system will provide a world of opportunities to customers, service partners, hardware manufacturers and integrators, enhancing user experience across land, sea and air to support multiple customer segments, including government, consumer and enterprise. Furthermore, an advanced portfolio of solutions to support government and defense users will accelerate Thuraya's leadership in this market, both within the UAE, regionally and globally. Meanwhile, all existing products and services will continue to be supported by Thuraya's space and ground segments, enabling service continuity during and after the transformation programme.

Maxar Completes Power and Propulsion Element Preliminary Design Review

July 12, 2021 - Maxar Technologies announced that the Power and Propulsion Element (PPE) it is developing for NASA's lunar Gateway has passed its first Preliminary Design Review (PDR) and remains on track for launch in 2024. Passing PDR-1 means that Maxar expects to finalize the PPE system-level design over the next year, culminating in the Critical Design Review in May 2022. A second PDR this fall will verify that the evolved PPE design meets mission requirements and is cleared for final design review and fabrication. During this period, Maxar will continue to take delivery of flight hardware units based on the company's 1300-class spacecraft platform. Maxar's PPE is the foundational element of the Gateway, providing power, maneuvering, attitude control and communications systems for the lunar orbiting outpost. Gateway is a cornerstone of NASA's Artemis program, which aims to land the first woman and first person of color on the moon and enable future crewed missions to Mars. PPE is managed by NASA's

Glenn Research Center in Cleveland, Ohio. In 2020, NASA introduced new requirements, including the integration of the PPE with Northrop Grumman's Habitation and Logistics Outpost (HALO) on the ground to enable launch of both modules together on a single SpaceX Falcon Heavy launch vehicle. This change reduced Gateway's risk profile and increased its cost effectiveness, necessitating the need for a second PDR that reflects the evolved program design.

Virgin Galactic Successfully Completes First Fully Crewed Spaceflight

July 12, 2021 - Virgin Galactic Holdings, Inc. has announced that VSS Unity successfully reached space, completing the company's fourth rocket-powered spaceflight. The flight was the 22nd test flight of VSS Unity and the first test flight with a full crew in the cabin, including the company's founder, Sir Richard Branson. The crew fulfilled a number of test objectives related to the cabin and customer experience, including evaluating the commercial customer cabin, the views of Earth from space, the conditions for conducting research and the effectiveness of the five-day pre-flight training program at Spaceport America. VSS Unity achieved a speed of Mach 3 after being released from the mothership, VMS Eve. The vehicle reached space, at an altitude of 53.5 miles, before gliding smoothly to a runway landing at Spaceport America. This seminal moment for Virgin Galactic and Sir Richard Branson was witnessed by audiences around the world. It gave a glimpse of the journey Virgin Galactic's Future Astronauts can expect when the Company launches commercial service following the completion of its test flight program.

Northrop Grumman Finalizes Contract with NASA to Complete First Crew Module for Artemis Program

July 9, 2021 - Northrop Grumman Corporation has finalized a contract with NASA to provide the Habitation and Logistics Outpost (HALO) module for NASA's Gateway. Under the \$935 million contract, Northrop Grumman will complete the design and development activity currently underway and will also be responsible for integrating HALO with the Power and Propulsion Element provided by Maxar Technologies. HALO will be deployed in lunar orbit as the first crew module of the NASA Gateway, a space station orbiting the moon providing vital support for long-term human exploration of the lunar surface and deep space. The HALO module represents a critical component of NASA's Gateway serving as both a crew habitat and docking hub for cislunar spacecraft, or spacecraft that navigate between the Earth and the moon. HALO will feature three docking ports for visiting spacecraft and other lunar support vehicles. Previously, Northrop Grumman was awarded a contract to fund work through the Preliminary Design Review of HALO. This review, completed in May, confirmed the vehicle's design and satisfied NASA's overall Gateway requirements for the mission, including safety and reliability. Under the new contract, Northrop Grumman, along with its industry partners and suppliers, will be working towards a Critical Design Review in the spring of 2022 and delivery of the HALO module to the launch site in 2024.

ArianeGroup to Participate in Space Surveillance for Europe

July 1, 2021 - ArianeGroup has been selected for three projects in the "Space Situational Awareness and Early Warning" category of the European Defense Industrial Development Programme (EDIDP). These projects will enable Europe to improve its space and ballistic threat detection capabilities. ArianeGroup will coordinate a consortium of 24 partners in the SAURON project. Space Situational Awareness (SSA) provides precise information about the status of space traffic (satellites, launches, and space debris), in order to avoid collisions and protect against potential threats. Early Warning capability allows detection and analysis of missile and rocket launches for intelligence and missile defense purposes.

OneWeb Completes its 'Five to 50' Mission to Cover Regions North of 50 Degrees

July 1, 2021 - OneWeb announced the successful launch of another 36 satellites to mark the completion of its 'Five to 50' mission. With this major milestone, the Company is ready to deliver connectivity across the United Kingdom, Canada, Alaska, Northern Europe, Greenland, and the Arctic Region. The latest launch takes OneWeb's in-orbit constellation to 254 satellites, or 40% of OneWeb's planned fleet of 648 LEO satellites that will deliver high-speed, low-latency global connectivity. OneWeb intends to make global service available in 2022. Service demonstrations will begin this summer in several key locations – including Alaska and Canada – as OneWeb prepares for commercial service in the next six months. Offering enterprise-grade connectivity services, the Company has already announced distribution partnerships across several industries and businesses including with BT, ROCK Network, AST Group, PDI, Alaska Communications and others, as OneWeb expands its global capabilities. The Company continues to engage with telecommunications providers, ISPs, and governments worldwide to offer its low-latency, high-speed connectivity services and sees growing demand for new solutions to connect the hardest to reach places. The launch of the latest 36 satellites was conducted by Arianespace from the Vostochny Cosmodrom.

Liftoff occurred on 1 July at 13:48 BST. OneWeb's satellites separated from the rocket and were dispensed in 9 batches over a period of 3 hours 52 minutes with signal acquisition on all 36 satellites confirmed.

ICEYE Launches Four New Radar Imaging Satellites

July 1, 2021 - ICEYE announces the successful launch of four ICEYE SAR satellites. They were launched into orbit on a SpaceX's Falcon 9 smallsat rideshare mission via EXOLAUNCH. Three satellites of the latest technology generation will be added to the ICEYE constellation after a commissioning phase. The fourth satellite of this launch will be operated as a demonstration mission for the company's next-generation spacecraft. With this launch, ICEYE has successfully brought 14 satellites into orbit, including both commercial and dedicated customer missions. With the launch of multiple satellites, ICEYE continues to grow and operate the world's largest constellation of agile SAR satellites with the purpose of further developing and optimizing persistent monitoring capabilities. ICEYE's constellation is designed to reliably provide imagery of customers' areas of interest with a very short revisit time to enable the detection and tracking of rapid changes on the Earth's surface, regardless of time of day, or weather conditions.

Virgin Orbit: Tubular Bells Mission Successful

July 1, 2021 - Virgin Orbit confirmed it successfully deployed into orbit all 7 customer satellites onboard its LauncherOne rocket during today's Tubular Bells: Part One mission. Virgin Orbit's 747 carrier aircraft Cosmic Girl took off from Mojave Air and Space Port this morning at approximately 6:50 A.M. PDT/1:50 PM UTC and flew out to a launch site over the Pacific Ocean, about 50 miles south of the Channel Islands. After a smooth release from the aircraft, the LauncherOne rocket ignited and propelled itself towards space, ultimately deploying its payload into a precise target orbit approximately 500km above the Earth's surface. LauncherOne carried a total of 7 satellites to Low Earth Orbit (LEO) for this rideshare mission: four R&D CubeSats for the US Department of Defense, two optical satellites for SatRevolution, and the Royal Netherlands Air Force's first military satellite.

EXECUTIVE MOVES

Comtech Names Judy Chambers to Board of Directors

July 22, 2021 - Comtech Telecommunications Corp., a global leading provider of next-generation 911 emergency systems and secure wireless communications technologies, announced today that Judy Chambers, Managing Principal of Meketa Investment Group, has been appointed to Comtech's Board of Directors, effective at the start of Comtech's fiscal year 2022 which begins August 1, 2021. She will serve as Chair of the Board's Nominating and Governance Committee, which oversees the Company's corporate governance practices and processes, including its inclusiveness and diversity efforts.

REPORTS

A Nearly \$17B Opportunity for Flat Panel Satellite Antennas Over the Next Decade

July 28, 2021 - NSR's *Flat Panel Satellite Antenna Analysis, 6th Edition* report, released today, sees over 6M cumulative FPA shipments generating nearly \$17B in equipment revenues over the next decade. The growing Non-GEO HTS Consumer Broadband market will yield nearly 5M in shipments alone, driven by the growing number of HTS constellations expected over the next ten years

New WTA Report, "Service Automation and Orchestration for Teleport Operators"

July 21, 2021 - The World Teleport Association (WTA) released *Service Automation and Orchestration for Teleport Operators*, a new research report that shares insights from thought leaders around the industry on the power of process automation to drive high QOS, revenue growth and new business models. In the report, executives share their experiences and discuss a range of topics from the role of service orchestration, where it can be applied for the most benefit and key steps to doing so successfully. The report was sponsored by Kratos Defense & Security Solutions.

New Report Finds Connectivity Crucial to Seafarers' Future Welfare Needs

July 14, 2021 - Inmarsat has further showcased its commitment to crew welfare by sponsoring a new report exploring the future of seafaring to 2050. The report offers recommendations on how shipping, training institutions and welfare services can respond to the changing needs of tomorrow's seafarers. The thought-provoking study, 'A fair future for seafarers?', has been prepared by maritime innovation consultancy Thetius. It has been published with shipping's COVID-19 crewing crisis yet to be resolved.

Taking a view of the shipping industry to 2050, the report suggests epidemics and pandemics may become more common, predicts that crew safety, fatigue and harassment issues are unlikely to recede in the short term, and foresees the potential for seafarer abandonment and criminalisation as growing problems that need to be addressed.

Space Sector Ground Segment Report Forecasts \$67 Billion Cumulated Market Value from 2021 to 2030

July 12, 2021 - In response to the rapid growth and growing interest in the ground segment market, leading international consulting and market intelligence firm Euroconsult have released a new report analyzing revenue opportunities looking specifically at the Satcom, Earth Observation and Defense sectors. Euroconsult's *Ground Segment Analysis 2021* report provides a strategic overview of all ground-based elements for key downstream services, assesses global ground station trends and user terminals for Earth Observation and Satcom applications, examines key players and provides commentary, analysis and forecasts for the main opportunities and threats in this area.

NSR Releases Moon Market Analysis

July 7, 2021 - Built on NSR's extensive analysis of both historical missions and associated industry, *Moon Markets Analysis (MMA)* offers business-critical insight into the key missions, players, and verticals set to shape activity on and around the Moon through the next ten years. Robotics and Communications are expected to be the backbone of the developing moon markets, with early vertical revenues to generate \$9.6B. However, the most significant market opportunity lies in establishing a long-term human presence. Over \$32.9B has been focused on Lunar infrastructure alone. Achieving a sustainable Lunar Economy requires all these elements to succeed and develop. NSR's Moon Markets Analysis report (MMA) provides a thorough assessment of the developing Lunar Orbit and Surface Applications markets providing readers an insightful roadmap to Moon Market opportunities.

UPCOMING EVENTS

APSCC 2021 Webinar Series, Virtual Event, <https://apscsat.com>
LIVE Every Tuesday 9AM HK | Singapore Time

36th Space Symposium, August 23-26, Colorado Springs, Colorado, USA,
<https://www.spacesymposium.org/>

Satellite 2021, September 7-10, National Harbor, MD., USA, <https://www.satshow.com/>

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

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

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

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

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

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

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

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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.