

APSCC Monthly e-Newsletter

MAY 2019

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 April 1 to April 30.

INSIDE APSCC

Join APSCC Industry Briefing @ConnecTech Asia

June 18, Satcomm Hall, Lv1, Marina Bay Sands

APSCC will hold a Satellite Industry Briefing on 18th June at the ConnecTech Asia Satcomm hall. **Open to all exhibitors and visitors at the Satcomm hall**, APSCC will have this one day program focused on existing satellite trends, NewSpace in Asia and the WRC-19 campaign. Please join this interactive and energetic satellite program during ConnecTech Asia! For more information please visit <https://apsc.or.kr/apsc-industry-briefing/>

Mark Your Calendar for APSCC 2019 on Nov 19 – 21 in Bangkok, Thailand!

Intercontinental hotel Bangkok, Thailand

APSCC is pleased to announce that the APSCC 2019 Satellite Conference & Exhibition will be held in Bangkok, Thailand on 19th – 21st November 2019. For the first time held in November as Asia's must-attend executive event for the satellite and space industry, APSCC 2019 will incorporate industry veterans and new players through the 3-day of in-depth conference program to a broader audience. For more information please visit www.apscsat.com

NEW MEMBER

AsiaSat Joins APSCC as Regular Member

AsiaSat offers reliable satellite connectivity and media solutions to clients in the broadcast and telecom sectors through its fleet of seven satellites including AsiaSat 3S, 4, 5, 6, 7, 8 and 9, focusing on enhancing the end-user experience with groundbreaking solutions. From traditional content distribution to headends, telcos, DTH, DTT platforms; Occasional Use (OU); to new IP-based, hybrid OTT service, cutting edge VSAT solutions serving aviation, maritime, mobile backhaul, AsiaSat helps bridge the digital divide, aiming to be the foremost satellite solutions provider and the instinctive and desired partner of choice in Asia Pacific. AsiaSat is listed on the Hong Kong Stock Exchange (stock code: 1135).

SATELLITE BUSINESS

IEC Telecom and Thuraya to Supply VSAT+ Services to Turkish Market

April 1, 2019 - IEC Telecom is to open-up the Turkish maritime and offshore markets to even better value-added voice and data services through a new tie-up that will bring Thuraya's highly respected VSAT+ maritime satellite service to the region. Under the arrangement with Thuraya Telecommunications Company, IEC Telecom will act as the master distributor for VSAT+ across all main maritime market segments and customers, including high-end fisheries, offshore installations and merchant fleets. In a win-win partnership for both companies and the maritime industry, IEC Telecom will offer VSAT+ across Europe, Asia-Pacific (APAC), Middle East and Africa (MEA). IEC Telecom has been a leading provider of value-added voice and data services to the maritime industry for more than 20 years and was awarded best Maritime Thuraya Service Partner in 2018. Thuraya launched VSAT+ in Q4 2018. The service offers global coverage, best-in-class data rates to meet growing demand for high-throughput services, and high levels of reliability, security, resilience and flexibility. VSAT+ ensures optimum flexibility by combining Ku-band (for high-speed data) and L-band (for backup and fall back).

TIM Brasil Selects Gilat's Satellite Backhaul to Enable 4G Services for the Agriculture IoT Business

April 1, 2019 - TIM Brasil, a leading mobile operator with the largest 4G coverage in Brazil, and Gilat Satellite Networks announced that TIM Brasil selected Gilat's satellite backhaul solution to enable 4G services to unserved areas, such as highways and small towns, as well as to the agribusiness IoT market. Initially, Gilat will supply one thousand VSATs to complement TIM's cellular coverage program, "4G TIM in the Field". Further to "4G TIM in the field" project, already providing connectivity to major farm and mill partners, TIM Brasil is planning a complete national coverage calling for expanding its 4G services inland to increase productivity of the farming industry market in rural Brazil. The project allows communication between the field and the office, addressing one of the main challenges of the agribusiness market. The project provides robust real-time connectivity, automation, and ultimately delivering products faster and to the right markets. In partnership with TIM, Gilat will supply a 4G backhaul over a multi-spot beam Ku-band satellite to enable reach to the most remote areas of Brazil. The satellite backhaul will support the agribusiness IoT market as well as extending coverage to highways and improving the quality of life of the region's population, by enabling access to 4G mobile connectivity for the first time.

Viasat Introduces Second-Generation Hybrid Ku-/Ka-band In-flight Connectivity Antenna System

April 2, 2019 - Viasat announced the introduction of its second-generation Ku-/Ka-band shipset, inclusive of an advanced hybrid antenna and complementary radome. The latest dual-band system, aimed at the commercial wide-body aircraft market, will keep passengers and crew connected across commercial Ku- and Ka-band Geosynchronous and Non-Geosynchronous satellite networks, virtually anywhere they fly around the globe. The shipset sets into motion an accelerated migration path for commercial airlines to operate on Viasat's global network. It immediately enables worldwide roaming connectivity for new or retrofit aircraft – serving a large and growing portion of their routes on the fastest Ka-band networks, and the balance on global widebeam or spotbeam Ku satellites. Airlines can steadily migrate a greater proportion of their routes to the faster, more economical Ka-band service enabled by a growing array of partner satellites as well as the global ViaSat-3 constellation planned for launch in 2021 and 2022. Viasat has years of expertise in delivering dual-band antenna systems to the global market. The Company's first-generation shipset served airframes ranging from commercial narrow-body planes to larger senior leader government aircraft.

iForte of Indonesia Signs Major Contracts for Capacity on Telesat's New Telstar 18 VANTAGE HTS

April 2, 2019 - Telesat announced that PT iForte Solusi Infotek (iForte), a leading provider of USO (Universal Service Obligation) VSAT services in Indonesia, has signed major contracts for Ku-band HTS and C-band capacity on Telesat's new Telstar 18 VANTAGE satellite. The contracts result from iForte's recent selection by Indonesia's Ministry of Communication and Information Technology to support the Ministry's program of providing "Internet Fixed Broadband and Mobile Cellular Backhaul over Indonesia via a GEO Fixed Satellite Services (FSS) system." iForte, a longstanding Telesat customer, has been using C-band capacity on Telesat's Telstar 18 to provide USO VSAT services in Indonesia for over 10 years. Once the Ministry began its procurement process, iForte worked with Telesat to make Telstar 18 VANTAGE a core component of its proposed solution for serving Indonesia's broadband requirements. After iForte received notice of its selection under the Ministry's procurement process, it contracted with Telesat for multiple C-band transponders on Telstar 18 VANTAGE for the life of the satellite and entered into a separate multi-year contract for all of Telesat's HTS spot beams on the same satellite.

ThinKom Conducts Live On-Air Link Performance Tests over Inmarsat-5 Satellite

April 2, 2019 - ThinKom Solutions, Inc. has completed successful live tests to validate throughput performance of its ThinAir Ka2517 phased-array antenna over Inmarsat's I-5 Global Xpress military Ka-band satellite. The results exceeded expectations, achieving error-free data throughput rates of 185 Mbps on the downlink and 35 Mbps on the uplink. Testing was conducted during the week of March 4, 2019, in Hawthorne, California, using a vehicle-mounted Ka2517 phased-array satellite antenna with a 16W Plin SSPA. The Ka2517 was scanned over a wide angular range in order to test both low (15 degree) and moderate (45 degree) elevation angle performance.

U.S. Army Selects Hughes for Cooperative R&D Effort to Recommend Network Upgrades for Next-Generation, Friendly Forces Monitoring System

April 3, 2019 - Hughes Network Systems, LLC has been awarded a two-year Cooperative Research and Development Agreement (CRADA) by the U.S. Army for the third phase of the Blue Force Tracking (BFT-3) program. Under the agreement, Hughes and other industry participants will conduct research studies to

deliver a series of recommendations for modernizing the BFT system architecture to improve interoperability and resiliency, as part of an Open System Architecture (OSA) consortium working to achieve more flexible network tracking of friendly force locations. Hughes will present recommendations to bolster operational resiliency with emphasis on maintaining communications in contested environments. The OSA results under the CRADA will include modular network architecture recommendations for the U.S. Army to integrate various military and commercial networks and services using new standardized interfaces. This approach is expected to foster innovation through increased competition, eliminating single-vendor dependence on closed networks and yielding truly best-in-class technology solutions for the military.

Harris Corporation and L3 Technologies Stockholders Approve Merger

April 4, 2019 - Harris Corporation and L3 Technologies, Inc. announced that, at their respective special meetings of stockholders, Harris and L3 stockholders voted to approve all stockholder proposals necessary to complete the merger of equals transaction to create L3 Harris Technologies, Inc., a global defense technology leader that will be focused on developing differentiated and mission critical solutions for customers around the world. The merger is expected to close in mid-calendar year 2019, subject to satisfaction of customary closing conditions, including receipt of regulatory approvals.

Eutelsat Partners with Seraphim Space Camp for Space Technology Startups

April 4, 2019 - Eutelsat Communications is set to become a partner of Seraphim Space Camp, the UK's first accelerator for space technology start-ups. Launched by Seraphim Capital, the world's leading SpaceTech venture fund, Seraphim Space Camp was created a year ago in London. Eutelsat will join the likes of the European Space Agency, Rolls-Royce, and Airbus in supporting the 3rd edition of the Seraphim Space Camp programme. Over the course of 9 weeks, the selected startups will have their businesses accelerated to become investment ready and to achieve commercial scale, receiving assistance with fund-raising, business and commercial advice, individual coaching and mentoring opportunities, as well as access to Seraphim Space Camp's industry network. Eutelsat will be feeding into this ecosystem by actively engaging and providing its satellite expertise and space heritage to those participating start-ups, thus gaining exposure to a range of technological innovations which could support its future growth.

Intelsat and Aldea Join Forces to Deliver an Global Satellite and Fiber Video Distribution Network

April 8, 2019 - Intelsat S.A. and Aldea Solutions Inc. announced that the two companies have entered into a peering relationship to expand satellite and fiber video contribution and distribution networks for media customers globally. This agreement will also leverage both companies' extensive presence in Latin America. As a means to provide easier access for content programmers to Intelsat's premier media distribution platforms, Intelsat and Aldea are extending their combined infrastructure and footprint. Through the partnership, Intelsat will further expand the reach of its IntelsatOne terrestrial network via Aldea's international fiber network, adding connectivity to media locations in 35 cities, as well as connections to premium content programmers. In turn, Aldea will have access to Intelsat's video neighborhoods which house approximately 5,400 channels and reach 508 million households worldwide.

Comtech EF Data Awarded Significant Order for Heights™ Networking Platform from SES Networks

April 9, 2019 - Comtech EF Data Corp., which is part of Comtech's Commercial Solutions segment, received a significant follow on order from SES Networks for equipment to support its global mobility services. This award is focused on the high-end mobility maritime market with an emphasis on cruise ships, but with the capability of supporting other maritime applications. This follows on from other recent awards addressing requirements in the Enterprise and Mobile Network Operator vertical markets, and further demonstrates SES Networks' trust in Comtech EF Data's products to deliver solutions where the utmost performance, robustness, efficiency and quality of experience counts. Supporting SES Networks' growing mobility business, the order specified multiple Heights™ Networking Platform hubs, H-Pro Remote Gateways, HX Series Load Balancing and NetVue™ Integrated Management System. The integration of Comtech EF Data's Heights™ Networking Platform and the HX Load Balancing equipment will allow links on multiple transponders to be aggregated to provide high throughput services.

Beam Enters Indian Satellite Market

April 9, 2019 - Beam Communications Holdings Limited has signed a reseller agreement for Beam-branded Inmarsat equipment with a leading satellite solutions company in the Indian market, Station Satcom. The agreement formalises the partnership between Beam and Station Satcom after the Indian

headquartered company recorded initial orders of Beam equipment worth US\$250,000 since the start of calendar 2019, following the Indian government's approval to allow the sale and use of satellite devices on the Inmarsat satellite network. Inmarsat is the only global satellite service that is allowed to operate in India and most of Beam's products supplied to and sold by Station Satcom have been for its docking stations and its Oceana 800 satellite terminal, which is designed for maritime and in-building applications. Beam's docking stations are the only Inmarsat-approved docking units in the world and the Oceana 800 is the only device of its kind running on the Inmarsat GSPS Service. India is a new market for Beam and its expected to be a strong contributor to ongoing growth of the Beam equipment division, which enjoyed a 30% increase in sales in 1HFY19 over the previous corresponding period. Inmarsat officially launched its Indian GSPS Gateway in 2017, which will enable Indian government and private sector customers to access its satellite phone services via Inmarsat's 4th generation constellation. The gateway will enable the Indian government to provide secure communications to defence services, commercial enterprises, the maritime industry and India's remote communities.

Carnival Corporation Expands Experience Innovation Partnership with SES

April 9, 2019 - Carnival Corporation & plc announced an expanded relationship with SES, adding the world-leading satellite-enabled video and data service provider as a Global Experience and Innovation – Select Innovation Partner. As a Select Innovation Partner, SES will continue to work with Carnival Corporation's Global Experience and Innovation team as an integrated design, development and delivery partner for game-changing guest experience innovations including MedallionClass™ vacations, OceanView® and MedallionNet™ now exclusively available on Princess Cruises. To date, Carnival Corporation's Global Experience and Innovation team with SES Networks, the data business unit of SES, has created MedallionNet, the best Wi-Fi at sea, to deliver connectivity to guests that is fast, unlimited, reliable and affordable. The partnership has also produced the first real-time cruise ship/cloud-scale/shoreside intelligence synchronization model that powers the Ocean Guest Experience Platform™ – an Experience Internet of Things™ network on board select ships from Carnival Corporation's Princess Cruises brand.

Hughes Awarded Contract by Boeing to Develop Protected Tactical Enterprise Service

April 10, 2019 - Hughes Network Systems announced it has been awarded a contract from Boeing to develop mission management, system control, networking and ground hub capabilities in support of an anti-jam satellite communications capability for the Air Force's Protected Tactical Enterprise Service (PTES) program. The PTES program will provide tactical warfighters with a joint ground platform designed to deliver protected communications services through the Wideband Global Satcom (WGS) satellite constellation, commercial satellites and in the future, the DoD's Protected Tactical Satellites running the Protected Tactical Waveform (PTW). Hughes will design PTES sub-systems to support these tactical capabilities in the first phase of Protected Anti-Jam Tactical Satcom (PATS). The PTES technology developments will use an Agile Project Management approach required under the PTES contract. The contract work was initiated in late 2018 and is expected to run through 2025.

Virgin Atlantic to Enhance Passenger Experience with Inmarsat's GX Aviation Inflight Broadband

April 11, 2019 - Inmarsat has announced that its award-winning GX Aviation inflight broadband solution will be available to passengers onboard Virgin Atlantic's brand new Airbus A350-1000 aircraft. Virgin Atlantic is scheduled to receive 12 Airbus A350-1000s over the next three years, with GX Aviation pre-installed upon delivery. The service will be available once the first of these aircraft takes to the skies from late summer 2019, allowing passengers to seamlessly browse the internet, check social media, instant message and more, with speeds on par with mobile broadband on the ground. GX Aviation is the world's first and only global, high-speed inflight connectivity services delivered through a wholly-owned and operated network of high-throughput satellites. It was revealed as part of Virgin Atlantic's new onboard offering on the A350-1000 earlier this week, with other key features of the aircraft including an entirely new Upper Class cabin with brand new suite and social space. More than 1,600 aircraft are currently expected under signed contracts for Inmarsat's next-generation inflight broadband solutions for airlines, with a new business pipeline of approximately 3,000 aircraft worldwide.

Ovzon Expands Reach through Agreement with Intelsat

April 12, 2019 - Intelsat and Ovzon have entered into a multi-year agreement whereby Intelsat will provide service to Ovzon via two powerful steerable beams on Intelsat's planned new satellite, Intelsat 39, expected to launch in the third quarter of 2019. Intelsat 39 will provide services for network, video

distribution and government customers in Africa, Europe, the Middle East and Asia. The Intelsat-enabled service will add to Ovzon's existing capacity, thereby expanding coverage for Ovzon's customers. Combining the power, resiliency, and flexibility of Intelsat 39 with Ovzon's managed service and ultra-small laptop-sized terminals will provide up to 5 times the throughput capability to small teams conducting disaster response, intelligence gathering, and other operations, delivering mission-critical information at the tactical edge. Such capabilities have traditionally required 2.4 meter or larger terminals.

Tongan Government Signs Deal with Kacific for Remote Island Connectivity and Fiber Back-up

April 15, 2019 - Kacific Broadband Satellites Group (Kacific) has signed a fifteen-year agreement with Tonga Satellite Limited, a Tongan government company, to provide high speed broadband via satellite to the Pacific Island nation. The bandwidth supplied by Kacific's high throughput satellite, Kacific1, will be used to connect communities in 89 remote outer islands with high-quality internet – equivalent to that available in the main cities of Tonga. In the case of a fiber cable outage, similar to the one experienced over 12 days in January 2019, the satellite bandwidth can be redistributed and shared with Tonga's main centers. The bandwidth supplied by Kacific will be focused on government infrastructure such as hospitals, health clinics and dispensaries, primary and secondary schools, police stations and post offices. The bandwidth will also be used to support local businesses and foster the creation of new platforms for economic development, such as cooperative marketplaces promoted by Tongan government.

Bolivian Space Agency Deploys Newtec Dialog for Internet across Bolivia

April 16, 2019 - Newtec has deployed a Newtec Dialog® hub for the Agencia Boliviana Espacia (ABE) which will enable the agency to extend access to residential broadband to at least 6,000 users. The service will be delivered via ABE's Tupac Katari 1 satellite in Ka-band. The project, which is part of the government's National Broadband Plan, will serve the currently unserved Bolivian population at an affordable rate of entry for plans ranging from 4Mbps download and 1Mbps upload, and will mirror a similar cost of residential broadband access found in urban areas. The service will utilize the MDM2210 DVB-S2X IP satellite modem which is a two-way, high throughput modem that supports a wide range of IP services such as Internet/intranet access, Voice over IP (VoIP) and multicasting services. Its ease of installation, high-performance modulation techniques and integrated Wi-Fi enable network operators to offer IP broadband services in a cost-effective way over Ku- and Ka-band networks. The Bolivian government recognizes the importance of the availability of broadband services both for businesses and the general population of the country and aims to connect 50 percent of households to an Internet service by 2020.

Viasat and Ruralweb Form Distribution Partnership to Bring High-speed Internet to Brazil

April 16, 2019 - Viasat announced its first Brazilian wholesale distribution partner, Ruralweb, a Brazilian-licensed company offering satellite services since 2003. Through the agreement, Ruralweb will work with Viasat to distribute and deploy high-speed satellite internet services throughout all of Brazil, even the most remote locations in the country. Through a relationship Viasat maintains with Telebras, Viasat offers the most advanced broadband service via the SGDC-1 (Geostationary Satellite for Defense and Strategic Communications) satellite. By coupling the SGDC-1 satellite with Viasat's ground network and infrastructure, Ruralweb will bring Viasat's fast, reliable satellite internet services to residential, small office/home office, agricultural and enterprise markets. Viasat remains committed to bring high-speed, high-quality broadband service to the people of Brazil. The Company continues to invest resources into the local Brazilian market as it awaits final approval of the amendment to its agreement with Telebras by The Tribunal de Contas da União (TCU).

NSSLGlobal Brings Next-Generation Unified Comms to the Asia Seas

April 16, 2019 - NSSLGlobal has unveiled the latest addition to its maritime portfolio, FusionIP-LITE. Based on the award-winning FusionIP, FusionIP-LITE is specifically engineered for the Asia seas. For a single monthly service fee, FusionIP-LITE allows users to benefit from seamless automatic switching between cellular and satcom networks to ensure "always-on" connectivity with speeds of up to 40mbps. This unique NSSLGlobal solution also incorporates automatic WAN switching, an email service, core firewalling, eNOAD and file management/synchronisation capabilities, all at no additional cost. FusionIP-LITE integrates the best of two communication worlds for the Asia seas. Cellular connectivity is the primary connection and satcom the secondary; when vessels move out of cellular range, they are seamlessly transitioned between networks to achieve "always-on" communications while ensuring optimum data speeds. NSSLGlobal's FusionIP-LITE service uses a single 3G/4G/LTE SIM which is capable of delivering high-speed bandwidth up to 20km offshore – with download speeds of up to 40mbps –

making it ideal for leisure, fishing and commercial vessels.

Sudatel Participate in the Successful Launch for Arabsat 6A Satellite

April 16, 2019 - The Sudatel Telecom Group, through one of its companies Sudasat and Hajar Group, in partnership with Canar Telecom, witnessed the launch of Arabsat 6A satellite at orbital position 30.5, which includes a load of four Ka-band transponders, through which Sudasat will provide broadband communications and broadband services across the Sudanese territory to Internet providers, VSAT subscribers and mobile network operators. It also provides multi-purpose solutions for commercial and government sectors. Arabsat 6A includes many of state-of-the-art services that makes it the most satellite up-to-date, effective, flexible and versatile as it has a high capacity and provides digital broadcasting, telecommunications and Internet services to the customers in Sudan. It is worth mentioning that this satellite ground station services is hosted by the Sudatel Telecom Group via Abu Haraz satellite station.

Hughes Provides Affordable Internet Access across Vast Areas of Russia

April 18, 2019 - Hughes Network Systems, LLC announced the deployment of 1,300 satellite-enabled Community Wi-Fi Hotspots across Russia by longtime service provider customers AltegroSky Group of Companies and KB Iskra. With an average of 250 people having access to each of the Home/SMB hotspots, the providers will reach over 300,000 people in the Far East, Siberia, Central, Ural and Caspian/Volga regions, where Internet access was previously unavailable or unaffordable. Both KB Iskra and AltegroSky are leading satellite communications operators in the Russian market and have delivered a wide range of broadband services utilizing Hughes systems for over a decade, including over Wi-Fi hotspots. The Community Wi-Fi solution offers a cost-effective path to extend Internet service in areas where terrestrial broadband is unavailable or unaffordable, employing industry standard 802.11 Wi-Fi access points combined with a shared VSAT terminal for cost-effective satellite backhaul. This approach yields an affordable neighborhood service where any user can access the Internet with a Wi-Fi capable handheld or laptop, and requires substantially less capex per household than a traditional broadband deployment. Homeowners pay a monthly or even seasonal subscription fee to the operator to have Internet access in their homes.

Xplornet and Hughes Announce Agreement for EchoStar XXIV Satellite Capacity

April 22, 2019 - Hughes Network Systems announced that Xplornet Communications, Canada's leading rural broadband provider, has agreed to a lifetime capacity agreement on the next-generation JUPITER 3 Ultra High Density Satellite (UHDS), designated EchoStar XXIV. In a contract valued at more than \$250 million over 15 years, the agreement is for approximately 50 Gbps of Ka-band capacity reaching more than 90 percent of the population of Canada, along with system gateway and consumer premise equipment and operational and support services. Currently under construction, EchoStar XXIV is expected to launch in 2021 and bring more than 500 Gbps of capacity across the Americas. Powered by the latest JUPITER System technology, EchoStar XXIV will enable the continued growth of high-speed services for applications including consumer, enterprise, aeronautical, cellular backhaul and community Wi-Fi, bridging the digital divide and helping businesses and communities to thrive. The satellite is expected to deliver broadband services for 15 years and will join the largest fleet of High Throughput Satellites (HTS) across the Americas, all utilizing JUPITER System technology, including EchoStar XVII, EchoStar XIX, Hughes 65 West and Hughes 63 West.

Viasat and China Satcom Partner to Bring In-flight Connectivity Service to Airlines over China

April 23, 2019 - Viasat and China Satellite Communications (China Satcom) announced an agreement for a strategic partnership to jointly provide in-flight connectivity (IFC) services within China for domestic and international airlines. Viasat and China Satcom will work in partnership to enable Viasat's global airline customers to have roaming connectivity when flying over China; provide IFC service to domestic flights within China; and enable Chinese airlines to roam onto Viasat's global network. China Satcom is a licensed telecommunications service provider in China and also owns and operates the most capable and extensive Ka-band spotbeam satellite system in China, which is the only Ka-band system currently available for IFC service in the country. A key international destination for leading global airlines, China is the second largest aviation market in the world according to research from the International Air Transport Association. As one of the fastest growing flying populations globally, and one of the most mobile and digitally-enabled, there is tremendous national interest in high-speed, high-quality IFC on flights in country. Yet today only about four percent of flights within China are connected.

SatADSL and Türkmen hemrasy to Deliver Satellite Services to Europe and the Middle East

April 24, 2019 - SatADSL and the national satellite operator of Turkmenistan, Türkmen hemrasy, have signed a new partnership to deliver SatADSL's cloud platform to territories in Europe and the Middle East. The agreement will involve SatADSL providing its C-SDP solution, which is a complete OSS/BSS, carrier-grade, fully redundant platform which allows operators to easily outsource satellite services. SatADSL will connect to Türkmenistan's first satellite, the TürkmenÄlem 52°E, and, using KU-band transponders, will provide coverage for Europe and the Middle East regions, facilitating the penetration of new markets.

Comtech EF Data Expands Heights Networking Platform Product Line

April 24, 2019 - Comtech EF Data has expanded its Heights™ Networking Platform product line to add a new low-cost, high-performance remote gateway, the H-Pico Heights™ Remote Gateway ("H-Pico"). The H-Pico will address CAPEX-sensitive end users while retaining Comtech EF Data's position as the high-performance Very Small Aperture Terminals (VSAT) solution. H-Pico supports multiple remote to hub throughput tiers up to 10 Mbps, which is managed via a centralized licensing capability. This scheme allows users to standardize on a single remote platform for low to medium capacity sites, simplifying stocking and sparing. Additionally, H-Pico supports inbound hub to remote symbol rates up to 500 Msps with standards-based DVB-S2X MODCODs supporting up to 256QAM. H-Pico incorporates a quad-core processor enabling high efficiency and throughput with multi-layer optimization. The increased EIRP and G/T performance of new High Throughput Satellites (HTS) spacecraft allows for significantly higher user capacity. This increased capacity cannot be met if the underlying packet processing is not able to keep up with the increased traffic flow. H-Pico can support demanding user applications in a HTS environment enabling service providers to take full advantage of these new HTS designs and grow service levels as end users' demands grow.

Teleglobal Brings Broadband and Mobile Connectivity Services in Indonesia via SES Networks

April 24, 2019 - Communities in remote areas of Indonesia will soon be able to enjoy reliable broadband internet access delivered by Teleglobal enabled by SES Networks' managed data services and the SES-12 satellite, SES announced. Under a new agreement, Teleglobal and SES Networks will be partaking in the Ministry of Communication and Information Technology's universal service obligation (USO) project via its USO agency Badan Aksesibilitas Telekomunikasi dan Informasi (BAKTI) to provide broadband internet access and mobile backhaul services to 150,000 sites in remote parts of the country. The five-year agreement will see Teleglobal contract 1.3 GHz of capacity on SES-12, one of SES' high throughput satellites (HTS) covering the Asia-Pacific region, with an option to extend for a further five years. The largest SES GEO HTS covering Asia-Pacific has six regional beams and 72 high throughput user spot beams and can provide cost-effective solutions for broadcasters, content operators, mobile network operators, internet service providers, enterprise, maritime and aeronautical and government customers across Asia-Pacific and the Middle East.

NAPA Signs up to Become First Certified Application Provider for Inmarsat's IoT Service

April 24, 2019 - Inmarsat and NAPA, the leading provider of maritime software, services and data analysis, have signed an agreement to enable ship owners and ship managers to access and analyse real-time onboard data more efficiently through a dedicated application hosted on Inmarsat's new Fleet Data IoT service. Developed by Inmarsat and Danelec Marine, and made commercially available earlier this year, Fleet Data collects data from onboard sensors, pre-processes that data, and uploads it to a central cloud-based database equipped with a dashboard and an Application Process Interface (API). NAPA will then use this data to offer services for vessel performance monitoring, analytics and optimisation. Research published last year by Inmarsat on digital transformation in shipping indicated that, on average, ship operators and managers plan to spend \$2.5 million on IoT-based solutions within three years and expect average IoT-driven cost savings of 14% over the next five years. However, the research strongly suggested that a greater maritime appetite for IoT-based solutions would emerge if more data could be delivered and analysed in real-time.

Speedcast Brings Seamless Connectivity to Indian Waters with Nelco Partnership

April 25, 2019 - Speedcast International Limited has signed a partnership agreement with India's fastest growing VSAT service provider Nelco Limited, a Tata Enterprise, to offer seamless global communications while at sea in Indian waters. This is the first partnership of its kind where vessels of either company will be able to connect to the Ku-band networks of both companies seamlessly in and out of Indian waters. In this partnership, Nelco will also extend to its customers Speedcast's industry-leading products and

services, which include cybersecurity, crew welfare, content solutions, and data and voice applications. Until today, when vessels entered Indian territory, they were required to shut down their VSAT connection. Under the new partnership agreement, customers of either company can roam into each other's respective territories of coverage and maintain uninterrupted communications while at sea. Under this agreement, Speedcast will integrate with the Nelco network to allow either parties' customers to maintain connection while roaming between the different satellite coverage beams and teleports. With an integrated network, the service achieves global IP access for remote terminals and optimizes the global connectivity experience for our customers.

Hughes Launches High-Speed Satellite Internet Service in Chile

April 29, 2019 - Hughes Network Systems announced the launch of HughesNet, its flagship high-speed satellite Internet service for consumers and businesses, in Chile. Operating over the Hughes 63 West High-Throughput Satellite (HTS) payload, HughesNet reaches more than 98 percent of homes throughout Chile, including areas unserved or underserved by terrestrial providers. According to published figures on fixed Internet connections from the Subsecretaria de Telecomunicaciones (SUBTEL) in Chile, it is estimated that nearly half of Chilean households either have no broadband Internet access or their service is slower than 5 Mbps. To date, more than 1.3 million consumer and business subscribers in the Americas enjoy the many benefits of high-speed Internet access with HughesNet. Service plans offered in Chile come with built-in Wi-Fi and include speeds of up to 50 Mbps download and 5 Mbps upload.

UHP Networks Announces Solutions for High-Speed on-the-Move Connectivity

April 29, 2019 - UHP Networks, a leading global manufacturer of advanced VSAT networks and systems, has announced the availability of enhanced solutions for High-Speed Communications On-The-Move (COTM) of their award-winning VSAT product. These solutions comprise several key features, such as seamless switchover of mobile VSAT terminals between satellite beams, load balancing across the beams and ultra-high throughput to match the state-of-the-art High Throughput Satellites (HTS). UHP Networks is known for its disruptive innovation, and the new product release is true to the form. Multiple satellite footprints are stored in a super-compact remote terminal IDU which only consumes 9W and can be installed outdoors inside the mobile antenna enclosure. The remote has multiple DVB-S2X demodulators which can be used to accelerate monitoring of the adjacent beams. It implements a standard protocol to connect to the majority of COTM antenna controllers. The Hub is capable of fast assignment and de-assignment of bandwidth to terminals entering or leaving a satellite beam. It can also balance the traffic load across the beam based on beam priority and/or aggregate traffic load.

ORBCOMM and Kordia Extend AIS Contract with Australian Maritime Safety Authority

April 30, 2019 - ORBCOMM Inc. announced that the Australian Maritime Safety Authority (AMSA) has extended their contract for another year through ORBCOMM's partner Kordia. ORBCOMM and Kordia, a leading provider of mission-critical technology solutions in Australia and New Zealand, will provide satellite Automatic Identification System (AIS) data used for ship tracking and other maritime navigational and safety efforts to AMSA for designated regions and specific maritime projects. The AMSA contract award, which extends into 2020, was the result of a competitive bid among providers of space-based AIS data services. Headquartered in Canberra, Australia, AMSA is responsible for promoting maritime safety of navigation and protection of the marine environment as well as providing a national search and rescue service.

mu Space Secures Deal to Provide Satellite Monitoring Service in Thailand

April 30, 2019 - mu Space announced it has secured a deal to provide the facility, equipment and services to support the system monitoring of a high throughput satellite. The satellite monitoring station is expected to start operations in May 2019. It will be located in the northern Thai province of Chiang Mai. mu Space, a space technology company based in Thailand, develops satellite communication technologies to accelerate the adoption of Internet of Things devices and smart cities. It plans to lead space technology development and encourage new space investments in Asia-Pacific. In 2017, mu Space was able to secure a satellite license from Thailand's National Broadcasting and Telecommunications Commission. The 15-year license enables mu Space to operate a satellite and provide satellite-based services in Thailand until 2032.

BROADCAST

SES Reach Grows to 355 Million Homes Worldwide

April 2, 2019 - SES strengthens its position as the world's leading video distributor via satellite as the number of TV households it serves increased by more than 4 million to over 355 million in 2018. The results from the SES's annual market research highlighted further growth in SES's technical reach and underlined the important role of satellite in delivering video to large audiences directly and indirectly in a reliable and cost-effective manner. The results showed an increase in SES's technical reach in Europe, Latin America, Asia-Pacific, and Africa. In Africa, this included the addition of Kenya to the survey where more than 2 million TV homes across the country rely on SES for their TV content. In Europe, satellite broadcasting, and especially Direct-to-Home (DTH), remains the leading distribution technology, with SES serving 167 million TV homes across the continent. The SES fleet is also delivering video content to 72 million households across North America, mainly via the important U.S. cable neighbourhoods. Across other markets, SES continues to expand its technical reach, which now totals 102.6 million TV homes served by key video neighbourhoods in Asia-Pacific, Latin America and Africa.

NovelSat Introduces NovelSat FUSION to Address UHD Adoption and Spectrum Challenges

April 3, 2019 - Broadcasters face increased demand for higher resolution video standards that require an order of magnitude more satellite capacity. Meanwhile, spectrum is being challenged by 5G roll-outs. With that in mind, NovelSat has teamed up with igolgi to introduce NovelSat FUSION, an all-in-one solution offering new levels of satellite transmission efficiency so that broadcasters can drive down operational costs. NovelSat, a world leader in satellite transmission technology and igolgi, a leading provider of video processing, delivery and analytics software and solutions, have developed the FUSION solution, which integrates high-efficiency multi-stream video encoding and satellite modulation in a single transmit unit and satellite demodulation and multi-channel video transcoding in a single receive unit. The all-in-one NovelSat FUSION solution offers broadcasters significant savings in satellite bandwidth or enables transmission of up to three times more video content without increasing link budgets. NovelSat FUSION supports all satellite transmission standards, including DVB-S2/S2X, in addition to NovelSat NS4, the world's most bandwidth-efficient satellite transmission waveform. With the most current, advanced HEVC encoding from igolgi, the efficiency benefits of NovelSat NS4, and tight integration, FUSION outperforms all other broadcast solutions.

Harris Corporation and L3 Technologies Stockholders Approve Merger

April 4, 2019 - Harris Corporation and L3 Technologies, Inc. announced that, at their respective special meetings of stockholders held today, Harris and L3 stockholders voted to approve all stockholder proposals necessary to complete the merger of equals transaction to create L3 Harris Technologies, Inc., a global defense technology leader that will be focused on developing differentiated and mission critical solutions for customers around the world. The merger is expected to close in mid-calendar year 2019, subject to satisfaction of customary closing conditions, including receipt of regulatory approvals.

New NovelSat DRM Integration Simplifies Point-to-Point Satellite Broadcast Link Operation

April 5, 2019 - NovelSat announced a new solution that streamlines DRM operations for broadcast contribution links. Now, only a single key insertion at the modulator is needed for all transmitted media streams. This DRM solution enables fast and easy provisioning of point-to-point satellite links required for ad-hoc contribution applications such as SNGs, flyaways and more. Based on virtually unbreakable AES 256-bit encryption, NovelSat's comprehensive DRM solution delivers the highest level of data security available for satellite broadcasting and transmission for both network-level and link-level connections. The DRM solution is available as an integrated option in the entire NovelSat product line and includes per-service Entitlement (PID), Program Scheduling and Booking as well as Network Management.

Crown Media Family Networks to Deliver Growing Hallmark Channel Lineup to US Homes with SES

April 8, 2019 - TV Homes across the U.S. will continue to receive Crown Media Family Networks' channels because of an important renewal agreement with SES. As part of the nine-year deal announced today, Crown Media will migrate its popular Hallmark Channel portfolio from the AMC-11 satellite to SES-1, one of three satellites that are home to the leading cable programming distribution platform over North America. Crown Media will leverage a full transponder of C-band capacity aboard SES-1 to reach its total audience of more than 85-million U.S. cable homes with its flagship Hallmark Channel and the highly successful Hallmark Drama and Hallmark Movies and Mysteries channels.

MX1 and Minerva Networks Power Next-generation OTT TV Services

April 10, 2019 - MX1 has announced a partnership with Minerva Networks, a leading online video platform (OVP) provider, to offer turnkey, subscription-based and ad-funded over-the-top (OTT) video services. The integration of Minerva's market leading platform with MX1's proven content management services and global delivery infrastructure will enable media companies, broadcasters, mobile service providers, ISPs, and pay TV operators worldwide to launch robust, flexible, and scalable OTT video services quickly and cost effectively. Minerva's OVP supports a broad set of video services including live TV, video-on-demand, personal video recording, catch-up TV, pause of live TV, and restart TV. Minerva's platform also provides a rich set of analytics data that enable operators to optimize their video services in order to increase user engagement and retention. MX1 will manage all aspects of the OTT content workflow and service delivery, including operations and 24/7 monitoring.

NovelSat Unveils First End-to-End Video Delivery Solution for 4G/5G Mobile Networks

April 30, 2019 - NovelSat, a world leader in satellite transmission technology, unveiled a comprehensive satellite broadcast/multicast solution for the delivery of live TV and OTT video services. The innovative satellite-to-mobile video solution now enables mobile service providers to roll out TV and video services on a large scale while optimizing network investment. As mobile video dominates mobile data traffic, a mobile service provider using a hybrid satellite-terrestrial network can now keep pace with traffic growth while introducing new video services such as live TV channel bundles. Complementing existing backhaul links with a satellite broadcast overlay enables service providers to leverage 4G infrastructure while evolving to 5G networks and services. The broadcast overlay network delivers new levels of video quality and volume for OTT distribution to remote cache storage and for live TV streaming, thus offloading broadband backhaul connections.

LAUNCH / SPACE

PSLV-C45 Successfully Launches EMISAT and 28 Customer Satellites

April 1, 2019 - India's Polar Satellite Launch Vehicle (PSLV-C45) successfully launched EMISAT and 28 international customer satellites from Satish Dhawan Space Centre (SDSC) SHAR in Sriharikota. This flight marked the first mission of PSLV-QL, a new variant of PSLV with four strap-on motors. PSLV-C45 lifted off from the Second Launch Pad and injected India's EMISAT into a 748 km sun-synchronous polar orbit, 17 minutes and 12 seconds after lift-off. After separation, the two solar arrays of EMISAT were deployed automatically and the ISRO Telemetry Tracking and Command Network at Bengaluru assumed control of the satellite. In the coming days, the satellite will be brought to its final operational configuration. EMISAT is a satellite built around ISRO's Mini Satellite-2 bus weighing about 436 kg. The satellite is intended for electromagnetic spectrum measurement. The 28 international customer satellites, together weighing about 220 kg, are from four countries, namely, Lithuania (2), Spain (1), Switzerland (1) and USA (24). These foreign satellites were launched as part of commercial arrangements. The payloads carried by PS4 are Automatic Identification System from ISRO, Automatic Packet Repeating System from AMSAT, India and Advanced Retarding Potential Analyzer for ionospheric studies from Indian Institute of Space Science and Technology.

Airbus and SSC to Cooperate on Pléiades Neo in Reshaping the Earth Observation Market

April 1, 2019 - Swedish Space Corporation (SSC) and Airbus have signed a contract for SSC ground segment support services to the new Pléiades Neo constellation of very high resolution Earth observation satellites. The contract marks an important step in the long-term partnership between SSC and Airbus and extends the capabilities of both companies. The first two very high resolution Pléiades Neo satellites will be launched in mid-2020, followed by a second pair in 2022. They will join the existing Airbus constellation of optical and radar satellites and will offer enhanced performance, and the highest reactivity in the market. SSC will provide comprehensive ground segment support for the Launch and Early Orbit Phase (LEOP), as well as routine on-orbit support for telemetry, tracking, and control (TT&C) and data reception. The partnership also includes an option to provide potentially higher data volumes at a later stage, using the southern hemisphere station of Punta Arenas, Chile. The ground network has been designed by SSC and Airbus to complement Airbus' Direct Receiving Stations (DRS) as well as the Airbus SpaceDataHighway relay satellite system, while being flexible to adapt to changing seasonal needs and to give critical network diversity.

SSTL and OSS Collaborate on Disruptive Smallsat SAR Payload

April 2, 2019 - Two of the UK's leading Space sector companies, Surrey Satellite Technology Ltd (SSTL) and Oxford Space Systems (OSS) have been awarded National Space Technology Programme funding to develop an innovative and stowage-efficient Synthetic Aperture Radar (SAR) payload. This new technology delivers a truly disruptive solution and is a key enabler for the next-generation of SAR services from orbit where there are currently no low volume, deployable SAR payload solutions that meet the price points and lead times of the NewSpace opportunities. OSS' expertise in novel deployable antennas combined with SSTL's extensive experience with small, cost-competitive satellites delivers a powerful collaboration to successfully address this global market opportunity. The innovative SAR payload will be exclusively developed in the UK and will comprise of a highly stowage-efficient deployable antenna from OSS and a high bandwidth radar instrument and RF system from SSTL. Successful completion of the project will enable the OSS antenna to be flown on a future demonstration mission from SSTL targeted for a 2021 launch.

First Satellite in European SpaceDataHighway Forges 20,000 Successful Laser Links

April 2, 2019 - The European Data Relay System (EDRS) – dubbed the “SpaceDataHighway” by its private operator, Airbus – has passed another milestone. EDRS-A, the first satellite in what will eventually be a global constellation, has made its 20,000th successful optical link to its customer satellites since its launch in January 2016, marking a world first in laser communication in space. This milestone provides further evidence that ESA's Partnership Projects initiative successfully develop sustainable end-to-end systems, right up to in-orbit validation. The system is a public-private partnership between ESA and Airbus, with significant investment by the German Space Administration DLR. Satellites that are used to monitor the Earth operate from low-Earth orbits and usually relay the information they have acquired only when they are in a direct line-of-sight with a ground antenna. EDRS-A rides much higher in the sky, where it can maintain a continuous connection with its ground stations and an almost permanent one with the low-Earth orbiting satellites. The system uses secure laser communication to receive data from the low-Earth orbiting satellites and beams the information back to Earth via radio frequency.

China Launches Tianlian II-01 Data Relay Satellite

April 2, 2019 - China sent a new data relay satellite into orbit from the Xichang Satellite Launch Center in southwest China's Sichuan Province. The Tianlian II-01 satellite was launched by a Long March-3B carrier rocket. As the first satellite to constitute China's second-generation data relay satellite network, the Tianlian II-01 will provide data relay, measurement and control, transmission services for manned spacecraft, satellites, carrier rockets and other non-spacecraft users. The Tianlian II network will be markedly more advanced in mission planning, system management and operations than the first-generation network composed of Tianlian I satellites. The new network, with faster data transfer and higher multi-objective service capability, will play an important role in improving the transmission promptness, in-orbit security and mission flexibility for medium- and low-Earth orbiting satellites and manned spacecraft. The satellite is developed by the China Academy of Space Technology under the China Aerospace Science and Technology Corporation. The launch marks the 301st mission of the Long March carrier rocket series.

Arianespace Orbiting the Final Four Latest Satellites in the First Phase of SES's O3b Constellation

April 4, 2019 - The launch took place on Thursday, April 4, at 2:03 pm (local time) from the Guiana Space Center (CSG), Europe's Spaceport in French Guiana (South America). This was the fifth O3b mission by Arianespace, which has now orbited all 20 satellites in the first phase of this medium Earth orbit (MEO) constellation. Arianespace has launched a total of 61 satellites overall for SES since 1988, both geostationary and non-geostationary. With this fourth successful launch of the year, and the second Soyuz mission for constellations in 2019, Arianespace continues to prove that its family of launchers is perfectly suited to all types of missions into all orbits.

Relativity to Launch Telesat's Low Earth Orbit (LEO) Satellite Constellation

April 5, 2019 - Relativity, the world's first autonomous rocket factory and launch services leader, announced a contract with Telesat, the renowned global satellite operator, that allows Relativity to play a role in Telesat's innovative LEO satellite constellation. Telesat will now have access to faster, more frequent and more flexible launches at the lowest cost using Relativity's Terran 1, the world's first fully 3D printed rocket designed and built using Relativity's groundbreaking proprietary 3D printing technology platform. This is the first time Telesat, or any major global satellite operator, has selected a completely venture-

backed aerospace startup for launch services. This contract further solidifies Relativity's leadership in the emerging NewSpace launch services market. With its reinvention of the rocket-building process, Relativity is positioned to become a valued launch partner for Telesat's LEO program. Relativity is on track to conduct its first orbital test launch at the end of 2020, and continues to grow a customer manifest of leading global satellite operators, commercial companies, and government payloads.

GomSpace and Sky and Space Global Have Entered into a "Heads of Agreement"

April 8, 2019 - GomSpace Group AB and Sky and Space Global have conducted recent evaluation discussions regarding the provision and manufacturing by GomSpace of an additional constellation of nanosatellites for global services for Internet of Things (IoT) and Machine to Machine (M2M). In connection therewith, in order to reflect changes to the original project, the parties have also discussed changes to the original agreement and have now agreed on the principle terms for the provision and manufacturing by GomSpace of an additional constellation of nanosatellites under a new agreement and the principle terms for replacement of the original agreement entered into in 2017 (as amended). A replacement of the original agreement is necessary for the continued cooperation under the original project.

Maxar and NASA Complete Design Review for Restore-L On-Orbit Servicing Spacecraft Bus

April 9, 2019 - Maxar Technologies has announced that the spacecraft bus it is building for NASA's Restore-L project to refuel a satellite in Low Earth Orbit (LEO) has completed an important review process called the Critical Design Review (CDR). With the CDR complete, the spacecraft bus is on track to ship to NASA in 2020 for integration with the robotic payload and a forecasted launch in 2022. Maxar is also building both nimble robotic arms for the Restore-L spacecraft, which will capture, manipulate and refuel the Landsat 7 satellite. As previously announced, Maxar is working with NASA Goddard Space Flight Center's Satellite Servicing Projects Division (SSPD) to build a spacecraft that will rendezvous with, refuel, and safely release the U.S. Geological Survey's Landsat 7 remote sensing satellite in LEO. Restore-L is funded by NASA's Space Technology Mission Directorate. In addition to demonstrating the ability to refuel a satellite that was not designed to be serviced, Restore-L aims to validate the use of tools, technologies and techniques developed to enable future exploration missions and jumpstart a new satellite servicing industry for government and commercial customers.

Boeing and Australian Space Agency Commit to Future Collaboration

April 9, 2019 - Boeing and the Australian Space Agency have signed a Statement of Strategic Intent to help advance the agency's goals to expand Australia's domestic space industry. By 2030, Australia would like to grow the space market segment from AU\$3.9 billion to AU\$12 billion and double space industry employment from about 10,000 today to 20,000. The agreement features Boeing support for investments in R&D, innovation, STEM education and government programs aligned with the Australian Space Agency's priorities. Boeing's STEM efforts in Australia span universities and non-profits in order to help develop the future engineers and leaders of Australia's space industry. Boeing supports Space Squad, the Australian Youth Aerospace Association, the Australian Space Design Competition, and FIRST (For Inspiration & Recognition of Science and Technology) including its exciting robotics program "Mission Moon."

RUAG Space to Supply Payload Fairings for H3 Rocket

April 10, 2019 - RUAG Space and Mitsubishi Heavy Industries (MHI) have signed a contract for RUAG Space to develop a payload fairing and payload supporting structures for the H3 launch vehicle. After development, RUAG Space will produce three sets of payload fairings and supporting structures, and provide engineering support for the launch campaigns. The H3 is the new Japanese flagship launch vehicle, which is being developed by the Japan Aerospace Exploration Agency (JAXA) and MHI to succeed the H-IIA and H-IIB rockets. It will be 63m high with a diameter of 5.2m. RUAG Space payload fairings and supporting structures are planned to be used on three resupply missions to the International Space Station, which will be done by the HTV-X cargo spacecraft. The HTV-X is a planned successor to the HTV Transport Vehicle, which has been used for resupplying the International Space Station since 2009. Its first flight is expected in the Japanese Fiscal Year 2021.

Virgin Orbit Add Guam as Low Inclination Launch Site for LauncherOne Smallsat Service

April 10, 2019 - Virgin Orbit, Sir Richard Branson's small satellite launch company, announced that the Pacific island of Guam will become an additional launch site for the company's LauncherOne service. With its remote location and close proximity to the equator, Guam serves as an excellent base of operations

from which the company's unique, 747-launched rocket can efficiently serve all inclinations, a boon to the rapidly expanding small satellite market. Most excitingly, the new location enables LauncherOne to deliver more than 450 kg to a 500 km equatorial orbit. The addition of Guam to that list enhances the flexibility of Virgin Orbit's launch operations, adding a low-latitude site with clear launch trajectories in almost all directions, giving Virgin Orbit's customers unparalleled control over where and when their small spacecraft are deployed. Virgin Orbit's LauncherOne system is now in the final phases of testing, after successfully demonstrating all major assemblies with multiple flight vehicles in production. Having just completed its fourth captive carry flight with a test rocket mated to the wing, Virgin Orbit is on track to conduct its first orbital test flight later this year.

SpaceX Falcon Heavy Launches Arabsat-6A

April 12, 2019 - On Thursday, April 11 at 6:35 p.m. EDT, Falcon Heavy launched the Arabsat-6A satellite from Launch Complex 39A (LC-39A) at NASA's Kennedy Space Center in Florida. The satellite was deployed approximately 34 minutes after liftoff. Following booster separation, Falcon Heavy's two side boosters landed at SpaceX's Landing Zones 1 and 2 (LZ-1 and LZ-2) at Cape Canaveral Air Force Station in Florida. Falcon Heavy's center core landed on the "Of Course I Still Love You" dronship, which was stationed in the Atlantic Ocean. Arabsat-6A is a high-capacity telecommunications satellite that will deliver television, radio, Internet, and mobile communications to customers in the Middle East, Africa, and Europe. Built on Lockheed Martin's enhanced LM 2100 platform, Arabsat-6A includes several innovations that provide advanced Ka spot beam communications services and Ku and Ka-band coverages in addition to other frequency bands. It will be located at one of Arabsat's orbital positions and will support Arabsat's competitive position as the first operator in the region for satellite capacities and services.

ILS Opens New Era with New Launch Pricing; Will Operate under Glavkosmos

April 12, 2019 - International Launch Services (ILS), a U.S.-based global commercial launch services provider, is inaugurating a new era in its 25-plus-year history, and in the life of the historic Proton M launch vehicle, company officials have declared. Cost savings have been achieved through benefits realized from quality improvement initiatives coupled with significantly lower production and launch site costs. These significant cost savings have been achieved through the teamwork of Glavkosmos, ILS, Khrunichev and its team of subcontractors, under the supervision of Roscosmos State Corporation. In its new incarnation, ILS will now operate under the auspices of Glavkosmos, a long-standing commercial subsidiary of Roscosmos State Corporation. Under the Glavkosmos umbrella, ILS will offer Proton in parallel with GK Launch Services, which provides the famed Soyuz-2 vehicle. ILS will broaden its commercial activities as the North American marketing unit for Glavkosmos to expand sales of equipment and services from leading enterprises of the Russian space industry.

NASA, Blue Origin Agreement Signals Rocketing Growth of Commercial Space

April 17, 2019 - NASA and the private space company Blue Origin have signed an agreement that grants the company use of a historic test stand as the agency focuses on returning to the Moon and on to Mars, and America's commercial space industry continues to grow. Under a Commercial Space Launch Act agreement, Blue Origin will upgrade and refurbish Test Stand 4670, at NASA's Marshall Space Flight Center in Huntsville, Alabama, to support testing of their BE-3U and BE-4 rocket engines. The BE-4 engine was selected to power United Launch Alliance's new Vulcan rocket and Blue Origin's New Glenn launch vehicle – both being developed to serve the expanding civil, commercial and national security space markets. Constructed in 1965, Test Stand 4670 served as the backbone for Saturn V propulsion testing for the Apollo program, which celebrates its 50th anniversary this year. Later, it was modified to support testing of the space shuttle external tank and main engine systems. The facility has been inactive since 1998. NASA identified the 300-foot-tall, vertical firing test stand at Marshall as an underutilized facility and posted a notice of availability in 2017 to gauge commercial interest in its use. Blue Origin responded and a team was commissioned to begin exploring the proposed partnership.

Arianespace to Launch SAR Satellite aboard Vega for Japanese Startup Company Synspec

April 18, 2019 - Arianespace announced the signing of a launch service contract with Synspec for the launch of the satellite StriX- α (with a liftoff mass of approximately 150 kg.) into a Sun-synchronous orbit (SSO) in 2020. This will be the inaugural mission for a Synspec customer spacecraft on an Arianespace vehicle. The launch will take place from the Guiana Space Center in French Guiana using a Vega launcher. Synspec is a Japanese startup company that will establish a synthetic aperture radar (SAR) satellite constellation of about 25 satellites and provide geospatial solutions. Gathering broad and high frequency

monitoring data with its satellite constellation, Synspective aims to enable companies and governments to achieve their goal for sustainable development and resilient urban development through visualization and prediction of economic activity, monitoring of terrain and structure and immediate understanding of disaster situations. In addition to the launch service contract, Synspective and Arianespace signed a Strategic Partnership Agreement to study a future cooperation.

Intelsat Reports Intelsat 29e Satellite Failure

April 18, 2019 - Intelsat S.A. announced that the anomaly previously disclosed on April 10, 2019 has resulted in the total loss of the Intelsat 29e spacecraft. A failure review board has been convened with the satellite's manufacturer, Boeing, to complete a comprehensive analysis of the cause of the anomaly. Late on April 7, the Intelsat 29e propulsion system experienced damage that caused a leak of the propellant on board the satellite resulting in a service disruption to customers on the satellite. While working to recover the satellite, a second anomaly occurred, after which all efforts to recover the satellite were unsuccessful. Since the anomaly, Intelsat has been in active contact with affected customers. Restoration paths on other Intelsat satellites serving the region and third-party satellites have been provided for a majority of the disrupted services. Migration and service restoration are well underway; highlighting the resiliency of the Intelsat fleet and the benefit of the robust Ku-band open architecture ecosystem.

China Launches New BeiDou Satellite

April 20, 2019 - China sent a new satellite of the BeiDou Navigation Satellite System (BDS) into space from the Xichang Satellite Launch Center in Sichuan Province. Launched on a Long March-3B carrier rocket, it is the 44th satellite of the BDS satellite family and the first BDS-3 satellite in inclined geosynchronous Earth orbit. After in-orbit tests, the satellite will work with 18 other BDS-3 satellites in intermediate circular orbit and one in geosynchronous Earth orbit. It will increase the number of visible satellites in the Asian-Pacific Region, providing better service for the region. The launch was the 302nd flight mission for the Long March series of carrier rockets, and the 100th for the Long March-3B. So far, a total of four BeiDou test satellites and 44 BDS satellites have been sent to preset orbits via 36 flight missions launched by Long March-3A and Long March-3B carrier rockets.

AST & Science Announces Successful Launch of its First Satellite

April 23, 2019 - A designer and manufacturer of LEO satellites, AST & Science announced that its first satellite, designated BlueWalker 1, has been successfully launched, stabilized in orbit and is ready for operations. The BlueWalker 1 nano-satellite was launched into orbit on a PSLC-C45 launch vehicle from the Datish Dhawan Space Center in India April 1. The satellite is functioning satisfactorily and is ready to move into full operation. BlueWalker 1 is flying in a stable low-Earth orbit (LEO) at an altitude of about 500 miles. It will serve as a testbed for AST & Science patented technologies in space over the next several years. Earlier this year, AST & Science opened a new U.S. office in the Washington, D.C. area and a design center for RF and electronics in Israel, complementing the corporate headquarters and 85,000 sq. ft. high-volume manufacturing plant in the Midland Space Port Business Park. AST & Science also acquired a controlling interest in NanoAvionics in 2018.

Kacific1 Moves into Final Phase of Construction – on Track for 2019 Service

April 23, 2019 - Following the successful completion of payload and bus integration, Boeing Satellite Systems International (Boeing) will begin antenna range testing and core testing of the Kacific1 satellite. Kacific Broadband Satellites Group's (Kacific) first satellite is a high throughput satellite (HTS) currently in production at Boeing's El Segundo, California facility for satellite technology. It is 75 percent through module level testing and about to move into the final phase of construction. The HTS satellite will then undergo mechanical vibration and acoustic environmental testing.

China's Planned Space Station to Support Hundreds of Experiments

April 24, 2019 - Science facilities on China's planned Tiangong space station could support hundreds of space research projects after it's completed in 2022. Sixteen experiment racks will be installed in the core module and two lab capsules of the space station, and an extravehicular experiment platform will be built. Each rack is regarded as a lab that can support various space experiments, and astronauts can upgrade and replace the facilities. In addition, a capsule holding a large optical telescope will fly in the same orbit as the station, according to the Technology and Engineering Center for Space Utilization (CSU) of the Chinese Academy of Sciences. The facilities will support a large number of research projects in fields such as astronomy, space life science, biotechnology, microgravity basic physics and space materials science.

China is seeking international collaboration in experiments on the station to promote sustainable global development and cooperation.

UKEF Supports Airbus UK as it Delivers Two Satellites to Turksat

April 25, 2019 - International Trade Secretary Liam Fox announced that UK Export Finance (UKEF) will support an Airbus Defence and Space Ltd UK contract with Turksat, the Turkish communications satellite operator. Airbus will manufacture and deliver, in orbit, two telecom satellites and a ground station, which will be essential for the continued provision of TV and data services in Turkey and the wider region. UKEF is supporting Airbus UK's contract to manufacture the two satellites, their launch into space and in orbit deliveries. This is a significant development in satellite financing, covering the provision of both space systems and related launch services under a single contract. UKEF is providing a guarantee to support a loan of \$325 million to the Turkish Ministry of Treasury and Finance to enable the purchase.

Lockheed Martin's AEHF-4 On-Orbit Test Proves Successful and Marks First of its Kind

April 29, 2019 - Lockheed Martin has announced the successful completion of AEHF-4 spacecraft on-orbit test and available for Satellite Control Availability (SCA). The AEHF-4 on-orbit test (A4 OOT) successfully activated the payload, built by its major subcontractor, Northrop Grumman, and demonstrated that AEHF-4 met all of its requirements. A4 OOT was the first ever test to have all six AEHF operational terminals communicating over XDR. The terminal types include AEHF SMART-T, FAB-T, MMPU, NMT, Global ASNT and ACF-IC2. The addition of AEHF-4 to the constellation provides a new capability of global extended data rate (XDR) communications. XDR communications provides data rates to its users five times higher than medium data rate (MDR) and 350 times higher than low data rate (LDR) communications. Milstar, the predecessor to AEHF, uses both LDR and MDR communication modes to directly support the warfighter. This was the last step before control authority of the satellite is handed over to the U.S. Air Force SMC where it will join the combined AEHF-Milstar constellation.

Thales Alenia Space Consortium to Implement a New Service Cloud Infrastructure for EUMETSAT

April 29, 2019 - Thales Alenia Space and the Polish company CloudFerro announce the signature of a contract with EUMETSAT, representing also ECMWF (The European Center for Medium-Range Weather Forecasts), and Mercator Ocean International (called the Partners), for the provision of cloud computing and related services for the WEkEO platform. WEkEO is one of the five Data Information and Access Services (DIAS) financed by the European Commission in the frame of the Copernicus Program. The WEkEO platform aims at federating the three Partners infrastructures and provides cloud elasticity through a hybrid Private/Public architecture. Under the contract, commercial exploitation rights are granted to the Thales Alenia Space and CloudFerro Consortium to develop and propose additional services on a different platform in a self-sustained manner. WEkEO offers data from the Partners and Copernicus data from Sentinel satellites, contributing missions and from the Copernicus marine, land, atmosphere and climate services. It features cloud/big data-based hosted processing and tools in order to bring the "user to the data" to transform the data and to provide services meeting their specific needs or the ones of their users. This new paradigm presents two major benefits, on one hand it reduces the volume of data to be transferred and on the other hand the „pay per use“ business model avoids users to invest and operate expensive ICT infrastructure. The development of the WEkEO platform starts on mid-April 2019.

SSTL Announces New Earth Observation Data Contract with Airbus

April 30, 2019 - Surrey Satellite Technology Ltd (SSTL) has signed a contract with Airbus to provide high resolution optical data from the SSTL S1-4, an Earth observation satellite which was launched in September 2018. SSTL will retain ownership and in orbit satellite operation, and will lease imaging payload capacity to Airbus for the lifetime of the satellite, designed to be in excess of 7 years. The new contract will contribute high resolution panchromatic and multispectral optical data into the Airbus portfolio which already includes image data from seven satellites manufactured by SSTL, the DMC Constellation and the TripleSat Constellation. The SSTL S1-4 satellite has a mass of 450kg and is capable of acquiring multiple targets in one pass, utilising spot, strip and mosaic imaging modes and 45 degree off-pointing agility for a range of applications including urban planning, agricultural monitoring, land classification, natural resource management and disaster monitoring. The very high resolution imager on board the spacecraft has been designed and manufactured by SSTL and will acquire sub 1 metre resolution images in panchromatic mode and sub 4 metre resolution images in multispectral mode, with a swath width of about 20.8km.

EXECUTIVE MOVES

Bryan McGuirk Joins Crystal as Chief Revenue Officer

April 2, 2019 - Crystal has appointed industry veteran Bryan McGuirk as Chief Revenue Officer. He will lead Crystal's commercial business across its broadcast software and advanced TV advertising solutions. Most recently, McGuirk served as Chief Commercial Officer for Globecom with commercial responsibility for its media, satellite and software platforms. McGuirk brings more than 25 years of media and technology experience to Crystal including executive roles at Turner, NBC, Wink and SES. His experience spans launching new TV networks for Turner, driving network HD adoption at NBC, launching interactive TV advertising for Wink, to launching new satellite media platforms for SES. In all facets, McGuirk has partnered with media industry leaders to drive success for their businesses.

Broadpeak Appoints Jean-Claude Sachot as New Business Development Director

April 2, 2019 - Broadpeak has appointed of Jean-Claude Sachot as the company's new business development director. In his role at Broadpeak, Sachot will work with global pay-TV operators, helping them take advantage of the company's unique solutions, such as the award-winning nanoCDN™ multicastABR, for providing cloud DVR services as well as delivering live and VOD streaming services at scale with minimal latency. Sachot has more than 30 years of experience in digital video processing and delivery, with strong engineering expertise and business acumen. Prior to working at Broadpeak, Sachot was the vice president of pre-sales – video CPEs at Technicolor.

Orbcomm Names Dean Milcos as EVP and Chief Financial Officer

April 5, 2019 - Orbcomm announced the promotion of Constantine (Dean) Milcos to Executive Vice President and Chief Financial Officer effective April 1, 2019, upon the resignation of Mike Ford, who previously held that position. Mike Ford's resignation is not based on any disagreement with the Company's accounting principles, practices or financial statement disclosures. As Orbcomm's Executive Vice President and Chief Financial Officer, Milcos will oversee the Company's financial operations, including financial planning and reporting, accounting, tax and treasury functions. Milcos joined Orbcomm in 2013 and most recently served as Orbcomm's Senior Vice President and Chief Accounting Officer since 2013 and Interim Chief Financial Officer from May to September 2018. Prior to joining Orbcomm, He served in various accounting roles at Medco Health Solutions, most recently serving as Vice President, SEC Reporting, Technical Accounting and Controls from 2008 to 2013.

Airbus Appoints Jean-Marc Nasr Head of Space Systems

April 23, 2019 - Airbus SE has appointed Jean-Marc Nasr, 57, Executive Vice President Space Systems within the Airbus Defence and Space division. Nasr will assume his new duties on 1 June 2019 and succeeds Nicolas Chamussy, 51, whose next assignment is subject to further notice. In his new role, Nasr will be Member of the Airbus Defence and Space' Executive Committee and report to Dirk Hoke, CEO of Airbus Defence and Space. Presently, Jean-Marc Nasr serves as Head of Region Asia Pacific for Airbus and Airbus Defence and Space. Johan Pelissier, 41, currently Head of South East Asia within Airbus Defence and Space, will succeed Jean-Marc Nasr in his current function and will be acting Head of Region Asia Pacific for Airbus Defence and Space as of 1 June 2019.

Speedcast Names Barrie Woolston as Senior Vice President

April 24, 2019 - Speedcast International Limited announced that Barrie Woolston has been appointed Senior Vice President of the company's Media and Broadcast team. In his new role at Speedcast, Woolston will help Broadcasters and Media companies navigate the complexities of global content distribution and the emerging trend toward IP and cloud-based services using the company's scalable global infrastructure that consists of satellite, fiber and cellular networks. Woolston has 30 years of experience in the Technology, Media, and Telecom sectors, with a particular focus on managing customer relationships and driving new business. Before working at Speedcast, Woolston was the Chief Commercial Officer at AsiaSat and the Commercial Director at Arqiva. Throughout the years, he has gained a strong understanding of DTH, OTT, satellite, and digital media technologies.

James Tucker Joins Satcom Global to Drive Growth in Asia Pacific

April 25, 2019 - Satcom Global, the leading provider of satellite communications services, announced that James Tucker has joined the company as President of their Asia Pacific region. James, who previously worked for network operator Inmarsat in a variety of senior roles, will be responsible for developing sales

strategy and driving growth of key Satcom Global services in Asia, working closely with established teams in Singapore and Japan. Before joining Satcom Global James worked at Inmarsat, most recently in a Maritime focused Vice President capacity, managing a range of commercial and solution focussed teams, developing market strategy and successfully growing revenue in key MSS (Mobile Satellite Service) markets.

Robert Lightfoot joins Lockheed Martin Space as Vice President

April 29, 2019 - Robert Lightfoot, a longtime NASA executive who served as both the agency's acting administrator and highest-ranking civil servant, will join Lockheed Martin Space as vice president, Strategy and Business Development, effective May 6. In his new role, Lightfoot will lead strategic planning, advanced technology concepts, and new business strategy for the corporation's Space business area. Lockheed Martin Space is a \$9 billion, 18,000-person enterprise that has been a leader in satellite and launch systems since the dawn of the space age. The business area's programs include GPS, missile warning and communications satellites for the Department of Defense; human and robotic exploration systems for NASA; weather and commercial communications satellites, and strategic missile and missile defense systems.

Newtec CEO Thomas Van den Driessche Named President of the Board of SSPI

April 29, 2019 - Space & Satellite Professionals International (SSPI) announced that Thomas Van den Driessche, Chief Executive Officer of Newtec, has been appointed president of the Board of Directors by vote of its members. Van den Driessche will work closely with Board Chairman David Myers, President of the Communications Sector for Peraton, to continue the growth of SSPI's membership beyond traditional GEO communications into LEO, MEO, earth observation, optical communications and into a new era of the space economy, with a more global footprint. Other current board members represent Blue Origin, Boeing, CBS, Ericsson, Eutelsat, Globalstar, Hughes Network Systems, Kymeta, OneWeb, Planet, SES, SpaceX, Speedcast, SSL, the Spaceconnection, Viacom and Viasat.

REPORTS

Space Robotics Market to Surpass \$3.5bn by 2025

April 9, 2019 - The space robotics market is predicted to hike from USD 2 billion in 2018 to around USD 3.5 billion by 2025, according to a 2019 Global Market Insights, Inc. report. The market is experiencing rapid technical development owing to the integration of AI technologies into systems developed for space exploration. Several companies are developing AI-based robots that provide enhanced mobility and manipulation benefits. These machines can perform highly-complex tasks for a longer duration and offer minimal human dependence. The integration of AI offers 3D perception and proximity GNC to robots, which will support resistance against environmental conditions and offer high flexibility, accuracy and control. In November 2018, an AI-based robot, CIMON, started its first conversation with a spacefaring crew. The robot is designed by DLR Germany in collaboration with IAM and Airbus. Moreover, the increasing number of experiments and projects related to space exploration by government agencies globally is attributing to the demand of the space robotics market.

The Installed Base of Wireless IoT Devices in the Oil and Gas Industry Reached 1.3 million in 2018

April 9, 2019 - According to a new research report *IIoT Applications in the Oil and Gas Industry - 4th Edition* from the M2M/IoT analyst firm Berg Insight, the number of devices featuring cellular or satellite connectivity deployed in oil and gas applications amounted to 1.3 million at the end of 2018. Growing at a compound annual growth rate (CAGR) of 6.8 percent, this number is expected to reach 1.9 million units by 2023. Remote monitoring of tanks and industrial equipment in the midstream and downstream sectors comprise the most common applications for wireless solutions in the oil and gas industry. Berg Insight expects that shipments in the upstream sector will grow faster, although from a much smaller base, as cellular communications become an increasingly viable alternative to proprietary radio due to improved 4G LTE coverage in North America and broader support from the industry.

NSR Releases Wireless Backhaul & 5G via Satellite, 13th Edition

April 9, 2019 - NSR's *Wireless Backhaul & 5G via Satellite, 13th Edition* study analyzes all the key market trends behind each major category of backhaul connectivity-services using a fixed satellite antenna. The core of NSR's detailed market review in *Wireless Backhaul & 5G via Satellite, 13th Edition* is rooted in the

bottom-up assessment and forecast of the installed base of Backhaul, Trunking, Hybrid Networks and 5G Sites in each of the seven different regions analyzed in this study. Following the installed base assessment, NSR then evaluates capacity demand in all frequencies and architectures, CPE shipments as well as the revenues generated.

Optical Satellite Communications Driven by Constellations and Data Downlink Demand

April 16, 2019 - NSR's *Optical Satellite Communications (OSC)* report forecasts nearly \$4 B in cumulative revenue over the 2018-2028 period for laser communication equipment in space. Largely driven by the impending wave of mega-constellations with inter-satellite links, the volume of production and subsequent deployment of Non-GEO satellites will drive revenue growth for equipment manufacturers. "The market growth for laser communication terminals (LCTs) rests strongly on the successful deployment of Non-GEO HTS mega-constellations," states Shivaprakash Muruganandham, NSR Analyst and report author. Constellations such as SpaceX' Starlink and Telesat's LEO that propose to incorporate inter-satellite laser links are expected to drive demand for Space-Space terminals beyond 10,000 units by 2028.

NSR Releases Satellite Capacity Pricing Index, 5th Edition Report

April 19, 2019 - Built on 15+ years of pricing research, NSR's *Satellite Capacity Pricing Index, 5th Edition* (SCPI5) continues as the leading industry resource for satellite capacity pricing worldwide. NSR's report focuses on a key burning question: will the industry reach price commoditization and what are the consequences thereof? NSR's SCPI5 report is unparalleled on the depth of insight provided through index prices, ranges and forecasts. Both NSR's proprietary SCPI5 pricing tool and analysis are definitive resources to predict the near to medium term scenarios for the industry and differentiate regional/vertical based forecasts to answer strategic questions on the evolving business models in the satcom industry.

UPCOMING EVENTS

Satellite 2019, May 6-9, Washington DC, USA, www.satshow.com

Space Tech Expo 2019, May 20-22, Pasadena, CA, USA, <http://www.spacetechempo.com/>

Australasia Satellite Forum 2019, May 21-22, Sydney, Australia, <http://www.talksatellite.com/asf2019flyer.html>

Satellite Industry Forum 2019, June 17, Singapore, <https://asiavia.org/events/sif-2019/>

Over the past year, we have witnessed profound change in the satellite industry. Evolving customer needs and requirements have led to fast-paced innovation from manufacturers and operators alike. Join AVIA at the Satellite Industry Forum 2019 on 17 June at Four Seasons Hotel, Singapore to find out what trends the satellite industry will see play out this year. Expect to meet more than 230 attendees and hear from 45 thought leaders this June. For more information, visit www.aviasif.com. Enjoy 15% discount for APSCC members. Email vanessa@asiavia.org for any registration enquiries

ConnecTechAsia2019 Summit, June 18-20, Singapore, <https://www.connectechasia.com/the-summit>

ConnecTechAsia2019 Summit is the preferred conference in Asia for innovative sessions by technology's rising stars and thought-provoking conversations with fellow industry peers. This is your chance to be part of a connected ecosystem – think three packed days of inspiring keynotes, focused tracks and engagement sessions with decision makers, sectoral stakeholders and digital communities. A supercharged arena powered by strong thought leadership, the Summit is inspired by innovators and enablers, tech superstars and leading organisations at the forefront of digital disruption. Reimagine the entire business value chain and help shape tomorrow's digital societies at ConnecTechAsia2019 Summit! Register now!

Industry Briefing @ ConnecTechAsia 2019, June 18, Singapore, <https://apscc.or.kr/apscc-industry-briefing/>

Satellite Track @ ConnecTechAsia 2019 Summit, June 19, Singapore, www.connectechasia.com/

ConnecTechAsia2019 Summit is the preferred conference in Asia for innovative sessions by technology's rising stars and thought-provoking conversations with fellow industry peers. This is your chance to be

part of a connected ecosystem – think three packed days of inspiring keynotes, focused tracks and engagement sessions with decision makers, sectoral stakeholders and digital communities. A supercharged arena powered by strong thought leadership, the Summit is inspired by innovators and enablers, tech superstars and leading organisations at the forefront of digital disruption. Reimagine the entire business value chain and help shape tomorrow’s digital societies at **ConneCTechAsia2019 Summit!** Enter the promo code ‘**CTACONF02**’ when registering and enjoy a 15% discount off all passes. [Register for the Summit now!](#)

Small Satellite Conference, August 3-8, Logan, Utah, USA, www.smallsat.org/

IBC 2019, September 13-17, Amsterdam, the Netherlands, <https://show.ibc.org/>

IAC 2019, October 21-25, Washington DC, USA, www.iac2019.org

China Satellite 2019, October 30 – November 1, Beijing, China, www.china-satellite.org

Asia Video Summit 2019, November 4-6, Hong Kong, <https://asiavia.org/insight/events/>

Global MilSatCom 2019, November 5-7, London, UK, <https://www.smi-online.co.uk/defence/uk/global-milsatcom>

APSCC 2019 Satellite Conference & Exhibition, November 19-21, Bangkok, Thailand, <http://apscsat.com>

APSCC 2019 Youth Development Workshop, November 21, Bangkok, Thailand, <https://apscsat.com/workshop/>

Broadband India Forum, November 27-28, New Delhi, India, www.broadbandindiaforum.com

Broadband India Forum is organizing 5th International Summit - India SatCom 2019 on 27 & 28 November, 2019 at New Delhi. The conference would deliberate on Policy and Regulatory measures required to facilitate rapid and barrier free deployment of Next Gen Satellite communications technologies to achieve the objectives of Govt's flagship programme on Digital India.

Editorials and Inquiries

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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.