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SPACE & SATELLITE

Updates from the SA-ME-NA Region and Beyond

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UAE-Made MBZ-SAT to be Launched in Late 2023

Salem Humaid Al Marri, Director-General of Mohammed Bin Rashid Space Centre (MBRSC), said the center is drafting strategic plans, in line with the visions of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President, Prime Minister and Ruler of Dubai, and His Highness Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, aimed at establishing a knowledge-based economy in the UAE. In a statement to the Emirates News Agency (WAM), Al Marri stressed that this vision is helping advance the national space and technological innovation sectors, noting that a specialist team was sent to South Korea 17 years ago, which led to the establishment of the current Emirati space program and the launch of locally-made satellites. Emirati companies are working on international projects, including the UAE-made MBZ-SAT, which will be launched by the end of 2023 as the second operational Emirati satellite, he said, noting it was made by Emirati engineers after KhalifaSat, and will play a pivotal role in supporting the Emirati space sector, being the most advanced satellite in the region in the field of high-resolution satellite imagery. He also highlighted the ongoing cooperation with regional and international companies in establishing a local space industries center, adding that related projects have helped train Emirati professionals, who now occupy in new and advanced positions, and who are also an inspiration to Emirati and Arab youth, such as Emirati astronaut Hazza Al Mansoori.

Hughes Selected for Mexican Satellite Initiative

Hughes Network Systems has announced that its JUPITER System platform has been selected by Stargroup, Apconet/Aitelecom, Eutelsat and Globalsat to power satellite connectivity at more than 7,200 sites across Mexico. Additionally, Stargroup says it has secured Ka-band capacity from the Hughes JUPITER high-throughput satellite fleet. The aforementioned companies were selected to connect community internet access sites by state utility firm Comision Federal de Electricidad (CFE), which is overseeing the government's 'Internet para Todos' ('Internet for All') initiative. The project will see broadband access extended to schools, health clinics and community centers in rural and hard to reach areas of Mexico.

China Successfully Launches Gaofen 12-03 Satellite

China has successfully launched the Gaofen 12-03 satellite, aboard a Long March-4C carrier rocket, from the Jiuquan Satellite Launch Center in Northwest China. The satellite will be mainly used in a variety of fields including land surveys, urban planning, rural land rights confirmation, road network design, crop yield estimation and disaster relief. This launch marks the 425th flight mission of the Long March series of carrier rockets. The Long March-4C carrier rocket used on this mission is a normal temperature liquid three-stage carrier rocket with excellent performance and wide application. It has the ability to launch various types of satellites with different orbital requirements. It has a carrying capacity of 3 tons to typical sun-synchronous orbit with an altitude of 700 kilometers. This is the first time that a Long March-4C model has applied fully autonomous alignment technology. Verified by measured data from multiple launch sites, the fully autonomous alignment relies on inertial unit measurement data to calculate azimuth in real time, and computer automatic binding reduces the risk of personnel transmission. It is also not affected by climate conditions such as blowing sand, strong wind and showers, thus improving the universality and adaptability of rockets compared with the traditional optical alignment technology that can transmit azimuth deviations. This mission is the sixth of the Long March-4C model this year. The proportion of young people in this rocket model team is more than 70%, but most of them also have rich experience in testing and launching.

Telesat Applies to Ofcom for Spectrum License

When it comes to establishing a low Earth orbit (LEO) satellite communications network, Canada-based satellite player Telesat has some catching up to do. Elon Musk's Starlink constellation, the largest currently deployed, already has over 2,200 devices in orbit, while the UK government-backed OneWeb's revival from bankruptcy in 2020 has seen it go on to launch nearly 400 devices, around two third of its planned global constellation. Even Amazon's long-delayed Project Kuiper will begin launching prototypes later this year, as well as announcing its first launch contracts for some of its planned 3,276 satellites. Telesat, meanwhile, currently has just one LEO satellite in orbit. Launched in January 2018, the satellite has since been part of numerous trials and demonstrations, proving the viability of a larger constellation dubbed Lightspeed. Ultimately, they aim for the constellation to comprise 298 satellites, with the devices beginning to be launched in full in the latter half of 2025. Commercial services are not set to begin globally until the start of 2026. The project has considerable backing from the Canadian government, which agreed to invest $1.15 billion in the company late last year. In total, the company has received around $4 billion in investment to help advance the deployment of Lightspeed. Now, it seems the company is already beginning the paperwork required to operate beyond the Canadian borders, applying for a spectrum license in the UK from telecoms regulator Ofcom. The spectrum requested from Ofcom falls in the Ka-band (27.5 GHz to 30 GHz range), theoretically giving them the ability to deliver multigigabit-speed broadband services to enterprises, as well as supporting mobile backhaul, maritime and offshore platforms, aviation, and government organizations. Ofcom is now considering the company's application for an Earth Station Network License, which would allow them to connect user terminals directly to the orbiting constellation using the spectrum in question. The regulator is inviting comments by the wider ecosystem over the next month, with a decision expected on September 12 2022. Interestingly, this spectrum is remarkably close to that potentially used to provide mmWave 5G services, with Ofcom itself currently in the process of ironing out the details of its upcoming mmWave 5G spectrum auction. The auction will make spectrum in the 26 GHz band (24.25–27.5 GHz) and 40 GHz band (40.5–43.5 GHz) available to UK mobile operators, with the consultation period for the auction's proposed rules ends next month. The auction itself is not expected to take place until 2024.

Zimbabwe Close to Launching Its First Satellite

Zimbabwe is the latest African country planning to set to launch its first satellite into orbit. Next month, or possibly in August, ZimSat-1, a nanosatellite, will be launched from the Japanese KIBO Module – Japan's science module for the International Space Station (ISS). More precisely, this is a CubeSat, a class of miniaturized satellite based around a form factor consisting of 10 cm cubes or units. Each unit typically weighs less than 1.33 kg. The plan is for a launch between July and August depending on weather conditions. The launch had been planned for February, but Covid-19 has caused a number of delays. ZimSat-1 is described in some reports as a major milestone expected to enhance mineral exploration, monitoring of environmental hazards and droughts, and mapping of human settlements and disease outbreaks, among many other capabilities. However, details of the precise projects it may support are not too clear. The TechZim site suggests it could be used for mapping to support the Zimbabwe National Geospatial and Space Agency (ZINGSA) National Wetlands Masterplan, which involves a comprehensive map of the country's wetlands across all 10 provinces. The launch continues the country's recently established space program, which began in 2018 with the launch of ZINGSA. ZimSat-1 was built by local engineers working with the Kyushu Institute of Technology in Japan. It will be launched by the Japan Aerospace Exploration Agency. The Bulawayo 24 website says that, with ZimSat-1 in orbit, Zimbabwe will become the 14th African country to have a presence in space. The Economist newspaper has reported that at least 20 African countries now have space programmes.

Telecom Italia, Eutelsat, Broadpeak Test Multicast Streaming Over Satellite

Telecom Italia (TIM) has joined forces with Eutelsat and Broadpeak to trial multicast signal distribution over satellite. The trial employed the TIMVision box in Adaptative Bit Rate (ABR) multicast mode, Eutelsat's Konnect satellite, which provides internet services in Europe, and Broadpeak's nanoCDN solution for content distribution. Multicast functionality enables broadcasting and media companies to stream live events without needing to duplicate transmission flows. According to the companies, this means the same content can be distributed simultaneously to connected users without taking up additional network and transmission resources, while also ensuring the simultaneous availability of adequate bandwidth for all other satellite services. "The testing has shown that the benefits of multicast transmission in terms of quality and network resource savings," said Crescenzo Micheli, TIM's head of technology and innovation, "This means that live content can be streamed, even at 4K resolution, with the same quality as a fiber connection, without restrictions linked to the number of simultaneous viewers." "Satellite has a clear potential in the distribution of video streaming technology, especially for large areas with limited internet connections," added Damien Sterkers, video solutions marketing director at Broadpeak. "Based on the multicast principle, it can totally offload from the network the peaks of streaming traffic typically generate by highly popular live events and secure a virtually unlimited quality to an unlimited number of users in the covered area."

Orange Egypt Taps Vendor for Satellite Connectivity Boost

Ericsson was chosen by Orange Egypt to supply antenna products for the building of the operator's 2,600MHz network, a move for the operator to proceed with its extensive rollout plan. In a statement, the Swedish vendor stated the move comes after Egypt's regulator awarded Orange Egypt 2,600MHz TDD spectrum. The operator will deploy the Ericsson Antenna system to construct the network, boosting coverage, capacity and throughput. Ericsson noted the antenna product has better wind load, less weight and high port count integration to aid Orange Egypt in "significantly" reducing operational expenses. Orange Egypt CTO Ayman Amiri said: "We always strive to provide the best mobile connectivity services to our customers in the most efficient and effective manner. With residents in Egypt becoming ever more reliant on mobile technology and communications, having an optimal network that offers super-fast speeds and meets user demands becomes crucial." Ericsson VP and head of the Saudi Arabia and Egypt division Mathias Johansson added: "The antenna system is a fundamental pillar of an operator's network infrastructure and is of vital importance in ensuring quality network communications. With the telecom industry having a huge responsibility keeping people and businesses connected in the region, we are committed to offering operators our state-of-the-art network technology and infrastructure."

Viasat Introduces Its Fastest Satellite Internet Service Plans

Viasat Inc. is elevating the home satellite internet experience in the U.S., giving customers in select markets new residential plans that will offer blazing high-speed connections, allowing customers to do more, faster – from downloading and streaming more movies, videos and content to enjoying a snappier web browsing experience. Viasat's New Choice home internet plans will give U.S. consumers more options in selecting the right internet service to meet their speed and data needs by offering five enhanced service plans that will deliver download speeds up to 25 Mbps and 150 Mbps in select areas. Viasat's New Choice home internet plans are available today, in select markets, with plans to roll out nationwide. Steven Mesnick, general manager of U.S. broadband at Viasat, commented, "With the launch of these New Choice home internet plans, we are introducing a new satellite internet experience to help meet the evolving needs of residential consumers. By optimizing our satellite network, we expect to deliver more data at faster speeds, more consistently. These speeds will enable us to provide the experience that our customers desire. Our new service plans demonstrate a technological achievement that we are proud of: delivering 100 times the speed compared to the first service plans we offered when we entered the residential internet market ten years ago with the launch of ViaSat-1. We are committed to innovation so that our customers can do more, faster." In a recent survey from Gallup, nearly half of all U.S. adults said they would prefer to live in a rural area or small town. This desire highlights the importance of high-speed satellite internet as people move into suburban and rural parts of America. Viasat's New Choice home internet plans can help meet this demand for high-speed connectivity even in the hardest-to-reach locations, by offering packages that will deliver download speeds of up to 150 Mbps in select areas. Viasat is committed to delivering more bandwidth, speeds and data to its residential customers. The Company's next-generation satellite constellation, ViaSat-3, is expected to be capable of delivering even greater bandwidth capabilities that will result in more speed, data and streaming options. Viasat has received various accolades from consumer outlets including being named the 'Fastest Satellite Internet Provider' among U.S. rural internet service providers (ISPs) by CNET and receiving the Best for High Speeds designation by ZDNet.

SES-17 Begins Delivering Satellite Connectivity Services Across Americas

SES announced that its newest geostationary Ka-band satellite, SES-17, is now fully operational over the Americas, the Caribbean and the Atlantic Ocean at 67.1 degrees West. The all-electric propulsion satellite has reached orbit per schedule after months of in-orbit raising and successful in-orbit testing. The very high throughput SES-17 satellite built by Thales Alenia Space is ready to provide unparalleled connectivity services to customers across aeronautical, maritime, enterprise, and government markets whether on land, at sea, or in the skies. SES-17 anchor partner, Thales InFlyt Experience, will leverage SES-17 for FlytLive, a next-generation aviation connectivity solution enhancing Wi-Fi experiences onboard commercial aircraft across the Americas and the Caribbean. Moreover, key enterprise customers in Brazil, Argentina, Colombia, Mexico, Canada, including SSi Canada and COMNET, will now expand the reach and capability of their broadband networks to more remote areas. With a fully digital payload powered by the most powerful digital transponder processor in orbit, an unmatched flexibility and nearly 200 user beams, SES-17 marks not only a significant development in satellite technology, but also is a first step in the integration of SES's multi-orbit network. The spacecraft's digital payload is supported by the Adaptive Resource Control (ARC) software, making it interoperable with SES's second-generation O3b mPOWER satellite communications system in medium Earth orbit (MEO), set to launch in the coming months. "We are excited to have the highly-anticipated SES-17 satellite start delivering services, while redefining and transforming the digital landscape for many different applications across the Americas and ultimately bringing high-speed connectivity to people wherever they are," said Ruy Pinto, Chief Technology Officer at SES. "At SES, we are extremely thankful to our partners at Thales Alenia Space and Arianespace that have shared our vision at each step of SES-17's journey to orbit." SES-17 was successfully launched onboard an Ariane 5 launcher operated by Arianespace from Europe's Spaceport in Kourou, French Guiana on 23 October 2021 at 11:10 pm local time (02:10 am UTC). SES-17 is the 37th SES satellite launched by Arianespace and the 30th built by Thales Alenia Space, joining the current SES satellite network of 70 satellites.

Mexico Taps Axess Satellites for Connectivity Ambition

Mexico tapped into satellite technology to deliver ubiquitous coverage for its citizens, as part of a major scheme to connect those in extremely remote areas. In a statement, network infrastructure company Axess Networks revealed it was one of two firms chosen by government arm CFE Telecommunications (CFE TEIT) and Internet para Todos (Internet for Everyone), to launch an additional 825 satellite internet sites to complement the current level of coverage. Axess was involved in the first phase of the national plan Internet for Everyone, in which the company aided by connecting 7.8% of citizens who live in extremely remote regions with zero connectivity, by bringing online 1,650 satellite sites. Axess also received recognition from the presidency of the Mexican government for its work in connecting the remote Marias Islands, which is being primed as a tourist destination. The CFE TEIT assigned 54 cellular backhaul sites to Axess in a move to make data service more affordable.

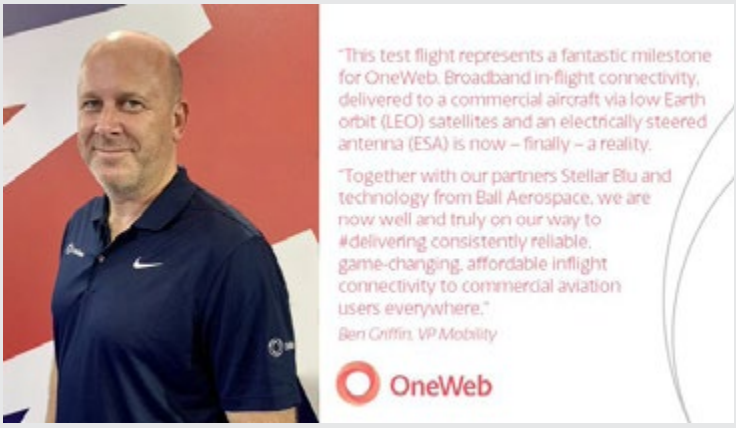
Airbus Confirms June 22 Launch for MEASAT-3d Satellite

Airbus has confirmed that its MEASAT-3d telecommunications satellite is set for launch later this month. The satellite is currently in Kourou, French Guiana and is ready for its launch on an Ariane 5 on 22 June 2022. This is the 57th E3000 satellite built by Airbus. It will be positioned at the 91.5°E orbital slot and collocated with MEASAT-3b, also built by Airbus. Airbus said that the new satellite will enhance broadband speeds of up to 100 Mbps in areas with limited or no terrestrial connectivity throughout Malaysia. It will also provide redundancy and additional capacity for video distribution in HD, 4K and 8K in the Asia-Pacific region. Key features of the satellite include C and Ku-bands capacity for DTH, video distribution and telecommunication services; a HTS Ka-band mission with multiple user spot beams optimized to deliver high speed broadband communications over Malaysia to bridge the digital divide in the country; and a Q/V band payload, first of its kind in the Asia-Pacific region, allows MEASAT to study the propagation effects in high rainfall regions like Malaysia. Francois Gaullier, head of Telecom Satellites at Airbus said: "MEASAT-3d is based on our highly reliable Eurostar satellite platform, including the current E3000 series, with 58 in orbit which have notched up more than 1000 years of successful operations. MEASAT is a key customer for us and we are looking forward to this advanced spacecraft supporting their future business."

SpaceX Signs First Airline for Starlink

SpaceX signed its first deal to add Starlink satellite internet to an air carrier's fleet of planes with semi-private charter company JSX, as Elon Musk's firm moves into the in-flight Wi-Fi market. JSX CEO Alex Wilcox told CNBC on Thursday that the agreement with SpaceX covers service on up to 100 airplanes. JSX currently has 77 30-seat Embraer jets in its fleet. "We'll be the first to have [Starlink] on an airplane," Wilcox said. The co-founder of JSX, Wilcox was the former head of product development at JetBlue Airways. SpaceX's Starlink service on JSX flights is pending regulatory approval, but Wilcox said he expects it to be available by the fourth quarter, if not earlier. Currently, a Starlink aircraft antenna is installed on a JSX airplane for testing purposes. "The SpaceX engineers are unbelievable," Wilcox said. Wilcox declined to provide financial details about JSX's contract with SpaceX. He noted that JSX will provide Starlink service to passengers free of charge, with no login screens required to access the network. Starlink on JSX "will be just like home, only faster," Wilcox said. In-flight connectivity is a market that SpaceX has talked about disrupting since the company began offering its satellite internet service, with Starlink vice president Jonathan Hofeller recently emphasizing that the aviation Wi-Fi market "is ripe for an overhaul." SpaceX began testing an aviation-specific version of its Starlink antenna, or terminal, more than a year ago. To date, SpaceX has launched about 2,000 Starlink satellites to support its global network. The company has about 250,000 total Starlink subscribers, which includes both consumers and enterprise customers. Users pay $110 a month for the standard service and $500 a month for the premium tier.

OneWeb Lauds Successful Trial of In-Flight LEO Services



Low Earth orbit (LEO) satellites could soon be used for in-flight broadband, following a successful test by UK-based OneWeb and its partners. The test saw a Boeing 777 passenger plane connect to OneWeb's network using a specially-designed terminal made by Stellar Blu, which signed a joint development agreement with OneWeb back in November last year. The terminal is named Sidewinder – hopefully after the snake and not the heat-seeking air-to-air missile – and incorporates electronically steered antenna (ESA) technology made by another partner, Ball Aerospace. The results look promising, with in-flight downlink speeds peaking at 260 Mbps, and 80 Mbps achieved on the uplink, which is no mean feat on an object travelling at several hundred miles per hour. OneWeb said latency was "well under" 100 milliseconds, and the testers were able to carry out a 5 GB file transfer in approximately 20 seconds. It is not clear how much bandwidth would be available to individual passengers if the plane was packed with 400 Tik-Toki-ing holidaymakers all trying to get online at once, but OneWeb said the test flight crew were able to simultaneously make Teams calls, stream Netflix and 4K YouTube content, and play online VR and Nintendo Switch games. It's also worth noting that the Sidewinder terminal was able to keep the plane connected during taxi, take-off and landing as well as during the flight. This is important because airlines don't want to have to install multiple terminals on their aircraft for connecting to different networks, it adds cost and weight – which reduces fuel efficiency. "This test flight represents a fantastic milestone for OneWeb. Broadband in-flight connectivity, delivered to a commercial aircraft via low Earth orbit satellites and an electrically steered antenna is now – finally – a reality," said Ben Griffin, VP of mobility at OneWeb, in a statement on Tuesday. "Together with our partners Stellar Blu and technology from Ball Aerospace, we are now well and truly on our way to delivering consistently reliable, game-changing, affordable in-flight connectivity to commercial aviation users everywhere." The test flight itself actually took place in Texas in late May, and was the culmination of months of ground trials. OneWeb and its partners said they plan to carry out further tests this year, with the aim of achieving certification for commercial use by the middle of 2023. As for when LEO-based in-flight broadband services become available to the public, well, that's anyone's guess. Thanks to covid, the airline industry is not exactly in rude health these days. According to the International Air Transport Association (IATA), the industry made a $126.4 billion net loss in 2020, as revenue fell to $328 billion from $838 billion in 2019. The recovery is expected to be slow going: in 2021, the net loss still stood at a hefty $47.7 billion. Cash-wise, the IATA reckons the airline industry burned through $149 billion in 2020, and $81 billion in 2021. With budgets under this kind of pressure, grounding planes so they can install new broadband terminals might be quite far down the list of priorities.

Sony Joins Satellite Push with New US Unit

Sony Group established a new company in the US to build compact optical communications devices that allow satellites to link in real time using lasers, as the Japanese company moves into the red-hot space-based mobile broadband sector. Sony Space Communications, set up through the group's US subsidiary Sony Corp of America, will develop optical devices to connect micro satellites in low-Earth orbit (LEO) with ground stations, with the aim of providing "easy-to-use inter-satellite communications capabilities," Sony noted in a statement. Kyohei Iwamoto, president of Sony Space Communications, stated that while there are about 12,000 satellites in space, with the number growing and the amount of data used in orbit also rising, the available radio waves is limited. He added LEO satellites need to communicate with the ground, requiring a large number of communications facilities, which is problematic because each bird must pass directly over a ground station to communicate with it. The new company will focus on lowering power consumption of high-speed communications equipment for smaller satellites and addressing the need for spectrum licenses for each frequency. Over the past 18 months, a number of communications companies, including SpaceX's Starlink, OneWeb, AST SpaceMobile, SES and Lynk Global, introduced plans to work with local operators to deliver space-based connectivity to remote rural areas using LEO satellites.

Satcube to Serve LEO Constellations with New Terminals

Satcube, a Swedish technology company that develops satellite terminals to provide satellite broadband, will now serve the biggest space constellations in the race to connect the world. The company is tapping its current success providing the UN, The Red Cross (ICRC), ITV, CBS News and more, reporting on the ground in Ukraine and helping to save lives by providing critical portable communications. In the leap from GEO to LEO satellite connectivity led by Starlink and Amazon, $47bn was invested in 2021 to launch thousands of new LEO satellites. Ground segment innovation, however, saw a meagre $0.5bn invested in comparison fort the same period. "While there is enormous investment in satellite and space, there is very little investment in ground infrastructure and equipment, such as portable and mobility user terminals and viable e-commerce solutions, to satisfy the rapidly evolving LEO-market," commented Jakob Kallmer, founder and CEO at Satcube. Citing a current lack of cost effective, easy-to-use compact terminal solutions in the LEO market as well as few terminal developments and limited scale in the GEO satellite market, Satcube aims to close the gap in the LEO satellite market by creating high quality, cost-efficient portable, mobility and enterprise terminals, designed, developed, and produced in Sweden. "Reaching the full potential of LEO satellites and broadened global connectivity will not be attainable before millions of user terminals on the ground are in operations," continued Kallmer. "A supplier that can design reliable terminals at a far better price point than today will see a market for several million devices" Displaying 100% revenue growth from Q1 2021 to Q1-2022, during the global pandemic, Satcube – led by founder and CEO Jakob Kallmer – has been working actively behind the scenes to bring critical connectivity to organizations. Amongst others, Kallmer's team has around ten active projects in Ukraine alone, including media houses CBS News, ABC News, ITV News, Norwegian Television NRK and Danish TV channel TV2, plus International Red Cross Geneva, UNHCR and the US and European Governments. To compete with the best terminal developers and fill the ground segment gap, Satcube's focus is a "Terminals-as-a-service" offering with intuitive user interfaces that anyone can operate. Automated, local production in Sweden will ensure a cost-efficient and secure supply chain. In addition, employing innovative antenna design that enables the world's most compact in size, weight, and energy efficient terminals, for lowest total cost of ownership. Satcube's Nordic design will be the keystone for authentic identity.

Telenor Maritime Signs Capacity Deal with Eutelsat for Cruise Connectivity

Telenor Maritime signed a capacity agreement with Eutelsat Communications for managed satellite services for cruise connectivity. Under the agreement, Eutelsat will deliver capacity on Eutelsat 33E for coverage of the Mediterranean Sea, and on Eutelsat 65 West A satellite, together with its Eutelsat Advance managed connectivity service, for coverage of the Caribbean Sea. Eutelsat said this deal demonstrates the value of the Advanced service, and supports momentum in the Mediterranean and Caribbean connectivity markets. The company highlighted growth in the maritime sector in its most recent financial results. Teleor will receive targeted resources and services in specific sailing areas. Telenor said the agreement will improve performance, coverage, and resiliency for maritime connectivity and provide reliable connectivity to the cruise segment. "We are truly excited to be working with a leading Geostationary satellite operator, Eutelsat, to address the ever-increasing connectivity needs of cruise operators. Eutelsat's outstanding in-orbit resources, combined with its robust managed services, have enabled us to come up with an offering that can be tailored to our customer's specific demands," commented Telenor Maritime CEO Lars Erik Lunoe.

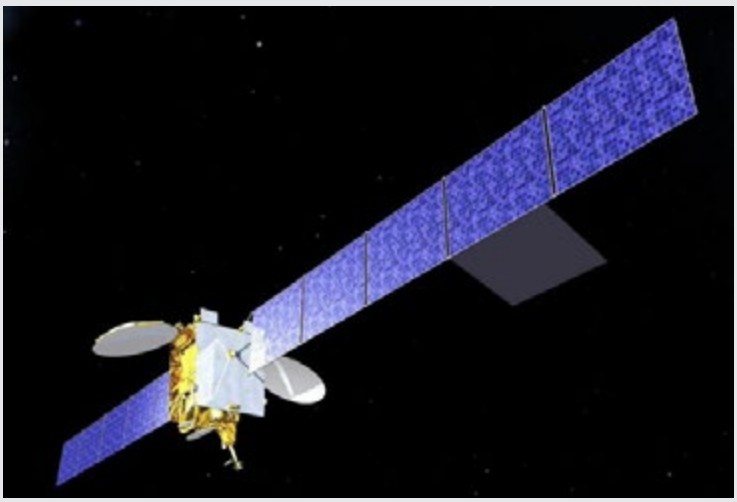
SES, Vodafone PNG Partner to Deliver 4G/5G Services Via Satellite to Papua New Guinea

Papua New Guinea (PNG) now has a new mobile service provider to choose from as Digitec Communications Limited (t/a Vodafone PNG) and SES have partnered up to provide 4G and 5G high-speed mobile broadband services. Both companies announced that the reliable high-speed data service will be delivered via SES's O3b medium earth orbit (MEO) satellite constellation, which will further enable economic opportunities and bridge the digital divide in the world's second-largest island. Under this partnership, the O3b MEO satellite constellation will provide Digitec with high-speed mobile backhaul services for 5 locations in PNG. With over 86% of its population residing in rural areas, much of PNG's population is still underserved despite an increase in internet penetration across the country at 15% and mobile connections at 34% as of January 20211. Having started services in April, Vodafone is the third largest and newest mobile operator in PNG. Its entry into PNG's telecommunications market addresses the demand among consumers and businesses for reliable high-speed connectivity and broadband Internet access. The connectivity that the O3b MEO satellite constellation brings is not new to PNG as it's been used by other mobile operators and internet service providers in the country since 2014. During the APEC 2018 summit it also helped with connectivity needs when PNG hosted this event. SES's O3b system is the world's only commercially successful non-geostationary satellite system and delivers low-latency, high-performance connectivity worldwide. The fiber-like speeds enable the delivery of cloud computing applications and services to bridge the digital divide, while connecting communities and industries regardless of the remoteness of the location. Ivan Fong, Director at Vodafone PNG said Papua New Guinea's mobile and internet market has enormous growth potential, but this has been hampered by geographical challenges, limited speed and connectivity choices. We are pleased to partner with SES to provide reliable high-bandwidth mobile connectivity of up to 5G speeds delivered through their MEO satellites. John Turnbull, Vice President Pacific, Networks Sales at SES said with our O3b constellation we've been connecting communities and industries around the world for almost a decade, positively impacting their lives and their businesses. Our partnership with Digitec brings their customers with a reliable, high-throughput and low-latency solution, underscoring the value of our unique satellite connectivity. With over 86% of its population residing in rural areas, much of PNG's population is still underserved despite an increase in internet penetration across the country at 15% and mobile connections at 34% as of January 20211. Having started services in April, Vodafone is the third largest and newest mobile operator in PNG. Its entry into PNG's telecommunications market addresses the demand among consumers and businesses for reliable high-speed connectivity and broadband Internet access. The connectivity that the O3b MEO satellite constellation brings is not new to PNG as it's been used by other mobile operators and internet service providers in the country since 2014. During the APEC 2018 summit it also helped with connectivity needs when PNG hosted this event. SES's O3b system is the world's only commercially successful non-geostationary satellite system and delivers low-latency, high-performance connectivity worldwide. The fiber-like speeds enable the delivery of cloud computing applications and services to bridge the digital divide, while connecting communities and industries regardless of the remoteness of the location.

Starlink Licensed to Operate in Nigeria, Mozambique

Elon Musk has announced that Starlink, the satellite internet service of SpaceX, has received licenses to operate in Nigeria and Mozambique. The company claims that the two countries are the first in Africa with Starlink regulatory approval, with the service now licensed to operate on all seven continents. The Nigerian Communications Commission (NCC) has confirmed that the company received two licenses – a ten-year international gateway license and a five-year ISP license – and will be trading as Starlink Internet Services Nigeria. Both licenses came into effect on 1 May 2022. The low-orbit Starlink satellites are designed to offer high speed, low latency broadband internet in remote and rural locations across the globe.

Inmarsat Team Works to Fine-Tune PNT Satellite Navigation



An Inmarsat-led team of companies in the UK, building on national expertise and prior experience within the group, has begun broadcasting a satellite navigation signal as part of a program to explore the creation of a sovereign national capability in resilient positioning, navigation and timing (PNT) for the aviation and maritime sectors. The signal, being broadcast in coordination with the US Federal Aviation Administration (FAA), the European Space Agency (ESA) and the European Union Space Program Agency (EUSPA), is now stable and operational, enabling on-going testing and validation by industry, regulators, and users. Inmarsat, the world leader in global, mobile satellite communications, alongside British partners Goonhilly Earth Station Limited and GMVNSL Limited, is delivering the UK Space Agency-funded tests with the European Space Agency via the latter's Navigation Innovation and Support Program (NAVISP). UKSBAS – the UK Space-Based Augmentation System – generates an overlay test signal to the US Global Positioning System (GPS), fully-compliant with International Civil Aviation Organization (ICAO) standards, to enable assessment of more precise, resilient and high integrity navigation for maritime and aviation users in UK waters and airspace. It increases accuracy in positioning to a few centimetres of accuracy rather than the few metres provided by standard GPS. This is a similar system to that already under evaluation in Australia and New Zealand, supported by Inmarsat. Since leaving the European Union, the UK is not part of the Galileo satnav system and cannot use the European Geostationary Navigation Overlay Service (EGNOS) safety of life (SOL) services, which enable the use of GPS for airport approach and landing operations for aircraft. By repurposing the SBAS transponder on Inmarsat's I-3 F5 satellite in geostationary orbit at 54° west, the UKSBAS signal enables testing of this potential alternative system to begin. Built by Inmarsat's Athena partner Lockheed Martin and launched in 1998, I-3F5 covers the UK as part of its Atlantic Ocean region service overlay. This makes it an ideal candidate to participate in this test and demonstrates the commitment to sustainability of Inmarsat with a satellite that has already served the equivalent of several low Earth orbit (LEO) satellite life cycles. Todd McDonell, President, Global Government at Inmarsat, said "The Inmarsat team is inspired by delivering solutions to new problems through technology and innovation. Repurposing a transponder on a long-serving satellite to deliver a new capability to the UK, potentially a vital and enduring one, certainly lives up to that core Inmarsat ethos. Working with our fellow British companies at Goonhilly and GMVNSL to deliver such a capability for the country is very rewarding and we look forward to reporting on the results." These tests will assess whether UKSBAS can develop into a full operational capability to support safety-critical applications such as airport approach and landing operations or navigating ships through narrow channels, especially at night and in poor weather conditions. Goonhilly provides the signal uplink for the system from Cornwall and software from GMVNSL, based in Nottingham, generates the necessary navigational data. Transport Minister Robert Courts said "The UK's thriving space sector is developing at pace, and British-led innovations like this have the potential to deliver crucial navigation services for our aviation and maritime sectors. "That's why this Government is investing millions in new technologies to make our transport network even safer while boosting high-skilled job opportunities across the nation." UKSBAS is helping to regenerate UK strategic capabilities in this domain. The establishment of this new national platform creates the opportunity to evaluate high-integrity, resilient and precise navigation across the country, in its airspace and within surrounding waters. The project may be crucial for UK users who need accurate, high-integrity navigation capabilities to enable their operations, initially covering aviation and maritime operations but with potential extension into rail and road applications. Paul Bate, CEO of the UK Space Agency, said "Congratulations to Inmarsat, Goonhilly and GMVNSL on this impressive achievement. In recent years, the UK Space Agency has invested in the development of UK expertise in Positioning, Navigation and Timing (PNT), and the government's commitment to strengthening PNT resilience is set out in both the National Space Strategy and Integrated Review, given its importance to our critical national infrastructure and economy. "This project is a great example of the innovation found throughout the UK space sector and demonstrates how we can work effectively with the European Space Agency to strengthen our national space capabilities."

Rwanda Inks MoU to Improve Satellite Communication Services

According to the GSM Association, in Sub-Saharan Africa, 206 million people are not covered by mobile networks. To allow its residents - who are not covered by mobile networks - access to digital services, Rwanda wants to rely on satellite internet. The Rwanda Space Agency (RSA) signed, Monday (June 6), a memorandum of understanding with the Global Satellite Operators Association (GSOA). Under this partnership, the two parties will explore ways to improve satellite communication services and accelerate digital inclusion in Rwanda, and Africa as a whole. The agreement covers key areas such as supporting the deployment of satellite communication services in Rwanda and preserving access to satellite spectrum. It will also contribute to preserving access to orbital slots reserved for developing countries, cooperation with African space agencies and the promotion of satellite communication services in Rwanda and Africa. According to GSOA secretary-general Aarti Holla-Maini (photo), the cooperation will facilitate the development of satellite communication services in Rwanda and provide support to the RSA to ensure that satellite spectrum are used for sustainable development. The agreement is announced two years after the Rwandan Space Agency was created, making Rwanda one of the few African countries that have space agencies. Apart from Rwanda, African countries with space agencies are notably Algeria, Tunisia, Morocco, South Africa, Angola, Egypt, Kenya, Nigeria, and Zimbabwe. In its report "The Mobile Economy Sub-Saharan Africa 2021," the GSM Association (GSMA) revealed that mobile Internet penetration was just 28 percent in sub-Saharan Africa in 2020 while the mobile penetration rate was 46 percent. So, in the region, the outstanding majority of the population does not have access to internet. But, telecom operators and governments are looking for solutions to allow access to telecom services for people, especially those living in rural areas with little or no terrestrial telecom service coverage.

InterSAT and SES Renew Partnership to Boost Digital Inclusion in Africa

African internet provider InterSAT has renewed its agreement with SES for capacity on the latter's satellite. SES's NSS-12 satellite, located at 57 degrees East, will enable InterSat to securely and efficiently serve its government institutions and enterprises customers. The two companies first partnered in 2010, and during this time they have expanded reliable connectivity services across the African continent, reaching locations that have not previously had access to telecom services and thereby reducing the digital divide. Hanif Kassam, CEO of InterSAT said: "Together with SES, we have helped empower entrepreneurs to grow, transform and digitize their businesses through development of smart and custom-made solutions throughout the continent. SES is a reliable partner to work with, and we can always count on their support to provide the best for our customers." "Our partnership with InterSAT has enabled us to pave the way for abundant digital opportunities across Africa by connecting the unconnected in some of the continent's most underserved locations. The digital access our services provide is allowing innovative solutions such as smart agriculture and precision farming to address some of the continent's biggest challenges," said Caroline Kamaitha, Vice President Sales Africa at SES.

Uzbekistan Woos Starlink, OneWeb to Bring Satellite Broadband

Uzbekistan is trying to woo Starlink and OneWeb to bring their satellite broadband services to Central Asia's most populous country. The overture is part of the Uzbek government's efforts to strengthen the nation's information technology competitiveness and provide better communications services to underserved remote areas. Ranking officials recently met with the Starlink and OneWeb representatives in the country's capital, Tashkent, asking for their satellite broadband services to be made available in Uzbekistan. They also called on the two companies to open an office there to explore further cooperation. The meeting between Uzbekistan's development of information technologies and communications minister and Starlink market access manager, Ben MacWilliams, took place May 10, on the sidelines of the Space Technology Conference STC-2022, according to a May 11 statement from Uzbekistan's state investment promotion agency. During the meeting, the minister, Sherzod Shermatov, called on Starlink to expand the scope of its services to include the Middle East, South Asia and Central Asia, according to the statement. The minister also suggested that Starlink open a representative office in Uzbekistan "to expand mutually beneficial cooperation." In response, MacWilliams announced his company's "readiness to implement large projects in Uzbekistan, as well as in other countries," according to the statement. SpaceNews reached out to Starlink to ask what the "large projects" are, but the company didn't respond. MacWilliams had a separate meeting May 9 with the director-general of Uzbekistan's space agency. They discussed the issue of bringing Starlink services to the country, according to the agency. On top of this, the agency signed a memorandum of understanding with British satellite broadband provider OneWeb, according to the agency's May 16 statement. OneWeb's marketing director, Ivan Zaitsev, represented the company in the signing ceremony. "The main purpose of the memorandum [of understanding] is to attract the British satellite communications company OneWeb to the Uzbek market," the statement reads. The deal set the stage for the two sides to hold a discussion of "regulatory issues and determining the main needs of the state to prioritize the use of the available OneWeb satellite capacity," it added. As part of the deal, the two sides agreed to establish a center of expertise on the use of OneWeb's satellite broadband in Uzbekistan. "The signing of a memorandum with OneWeb is a significant event in the development of space communications," the space agency's director-general, Shukhrat Kadirov, said in the statement. "The availability of OneWeb telecommunications services in the Republic of Uzbekistan will effectively implement the tasks envisaged by state programs for the development of information technologies and ensure the availability of innovative communication services even in remote regions of the republic." Uzbekistan's internet penetration rate stood at 70.5 percent of the total population of 34 million as of January 2022, according to data from DataReportal, an independent data collector.

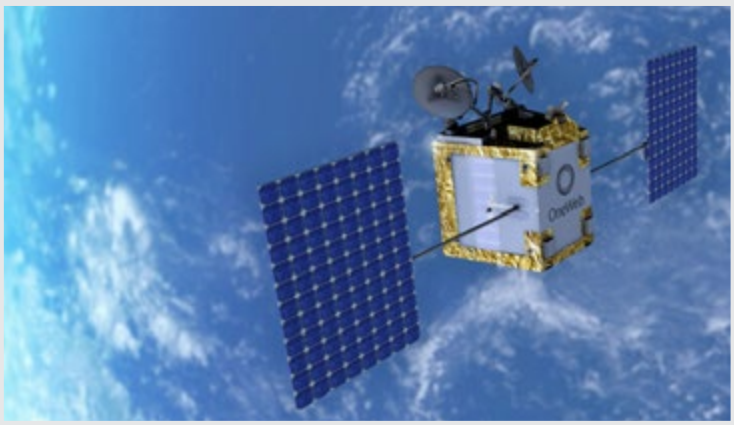
Telesat, Telefonica Global Solutions Complete Brazil's First LEO Satellite 5G Backhaul Demo

Telesat and Telefonica have announced the successful completion of the first 5G Low Earth Orbit (LEO) satellite backhaul demonstration in Latin America, with a Brazil-based trial. The testing campaign was managed by Telefonica Global Solutions (TGS), the Telefonica Group's satellite service provider. The Telesat Phase 1 LEO satellite Layer 2 backhaul link was connected to TGS's 5G test environment. Network measurements of latency, jitter and bitrate all met the functional requirements for integration with a 5G core network. Eloy Rodriguez Villa, SVP of Global Wholesale Customers at TGS, commented: 'Building on our successful LEO test with Telesat in Europe, we were eager to evaluate the performance of the Phase 1 LEO integration with a 5G network.'

African Satellite Soars Over 40% Yearly Growth

Liquid Telecom Satellite Services (LTSS) is expecting to see strong revenue growth in 2022, thanks in particular to strong demand for connectivity in Africa, CEO Scott Mumford told Via Satellite. LTSS grew by 25% in 2021 and that speed is accelerating year-on-year, according to Mumford. The 2022 forecast could be over 40% revenue growth, based purely on orders already in the pipeline. This is because the satellite cellular backhaul market is "growing, growing, growing," thanks to a transformation in the understanding and the mindset of satellite services in Africa over the last three years, said Mumford. While selling services into Africa was always tough, things are starting to change. Once satellite's original reputation for being slow, expensive and foreign to Africa was banished, people began to see the positives and those doing the marketing for the industry say they have turned a corner. "We are seeing huge demand across Africa. We are adding services into 10 new countries, said Mumford. "We have added the whole of West Africa into our footprint. We actually lit up another spot beam recently, which was a new beam over a new region. It has been strong. Satellite will continue to gain momentum and market share." In recent years deals between TIM and Eutelsat in 2020 and AT&T and OneWeb in 2021 changed the mindset towards how satellite works. "Telecoms understands that the world is large and that terrestrial mechanisms can be very good, but they can be very expensive and time consuming to deploy. They are very inflexible by nature. As we move to cloud-based and service-based ways of working, satellite is a critical element of that provision," said Mumford. In fact, it's not a matter of choice, Africa has to adopt it, according to the satellite CEO. People expect ubiquitous service, the African continent is vast and the only way to cover that is to embrace satellite. The technologies have evolved hugely over the last five years, as have the levels of service. Regulation is the main obstacle holding it back. "There are so many rules and regulations. The correlation between internet penetration and GDP growth is extremely well-documented and evidence based," said Mumford. This makes it difficult for service providers to set up a company in any country, which makes it difficult for them to start offering useful support to indigenous businesses and communities and improving the gross domestic output of that nation. "Some of those license requirements are extremely arduous," said Mumford. In one West African nation, for example, the satellite provider is being asked to prove that Earth stations are not dangerous. Providing the relevant FCC/ITU and antenna performance data to disprove a negative is a thankless task and involves talking to officials who still believe in non-ionizing radiation effects. "I can't believe we are still having that type of conversation in 2022, but that is an example of some of the hoops we still have to jump through. They need to make it easier for us to get those services into countries," said Mumford. Corruption and officialdom aside, Zimbabwe has displayed a developing maturity and Liquid Telecom installed 200 terminals in the country late in 2021. Southern Africa and West Africa have seen increased demand. Now markets which were traditionally outside of LTSS's footprint, such as the Central African Republic, Cameroon, Niger and Mali, are moving too. "We are pumping capacity into those markets with local providers who are desperate to get access to these services," Mumford said. "With some operators, we are struggling to find enough capacity for us to be able to take and keep growing." However, Low-Earth Orbit (LEO) won't be the gamechanger for the industry. Though latency is important for certain applications it's not universally critical. Don't expect a mass migration from other technologies to LEO. "We won't suddenly see 10 million new terminals active in Africa in three years' time," said Mumford. LTSS is examining how to orchestrate service across multiple systems and then tie that into its terrestrial infrastructure. "It's all about the service, not the delivery technology," said Mumford.

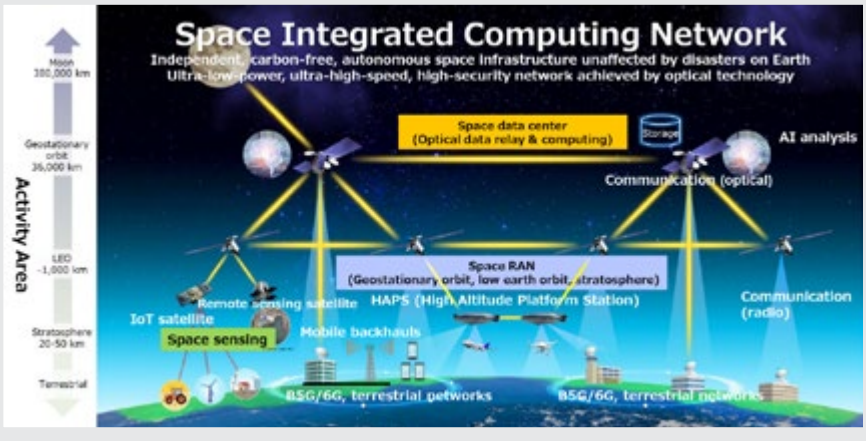
OneWeb Agrees Satellite Launch Program with New Space India



OneWeb, the Low Earth Orbit (LEO) satellite communications operator part-owned by the UK government, has sealed an agreement with New Space India, the commercial arm of the Indian Space Research Organization, to help ensure OneWeb completes its satellite launch program. The first launch with New Space India is anticipated in 2022 from the Satish Dhawan Space Centre (SDSC), adding to OneWeb's current total in-orbit constellation of 428 satellites (66% of its planned total fleet) to build a global network that will deliver high-speed, low-latency connectivity. Sunil Bharti Mittal, OneWeb Executive Chairman, said: 'This most recent agreement on launch plans adds considerable momentum to the development of OneWeb's network, as we work together across the space industry toward our common goal of connecting communities globally.' The launch contract follows a separate agreement between OneWeb and SpaceX to enable the company to resume satellite launches, announced in March. Detailed terms of the agreement with New Space India are confidential. OneWeb had cancelled an existing agreement with Russian space agency RosCosMos following Russia's invasion of Ukraine, and stopped launching satellites from Kazakhstan's Baikonur spaceport, leased to Russia. OneWeb has so far activated its network for remote parts of the globe above 50 degrees north, with early partners already initiating services.

NTT and SKY Perfect JSAT Establish Space Compass for GEO Satellite Broadband

Japanese companies Nippon Telegraph & Telephone Corp (NTT Corp) and SKY Perfect JSAT Corp have agreed to set up a new joint venture (JV) company to launch 'a novel integrated space computing network' starting with 'optical and wireless communication network[s] to be built in space and the mobile network to be built in the stratosphere'. The press release went on to note: 'In FY2024, Space Compass will launch an optical data relay service for high speed transmission to the ground via a geostationary orbit (GEO) satellite. This will carry a vast amount of diverse data collected in space by observation satellites. Existing services, which transmit data directly to ground stations, have communication capacity limits imposed by the use of radio waves as well as limits on the time at which ground stations can communicate with observation satellites. In contrast, optical transmission via a GEO will enable high-capacity, quasi-real-time data transmission.' As previously reported by CommsUpdate, in January this year NTT Corp, its mobile arm NTT DOCOMO, Airbus and SKY Perfect JSAT announced a joint collaboration on the feasibility of developing high-altitude platform stations (HAPS)-based connectivity services as part of 'a future space-based wireless connectivity ecosystem'. The parties reportedly entered into a memorandum of understanding (MoU) to identify the early deployment requirements of a HAPS-based network, and confirmed that the initial phase will involve exploring the use of the Airbus Zephyr, dubbed as a 'leading solar-powered, stratospheric unmanned aerial system (UAS)', alongside NTT's and SKY Perfect's wireless networks to test HAPS connectivity, identify practical applications, develop required technologies and ultimately launch space-based wireless broadband services.



Gilat Selected for Satellite Backhaul in DRC

Satellite broadband service provider Gilat Satellite Networks has been selected by Intelsat to provide a satellite based cellular backhaul solution to a mobile network operator (MNO) in the Democratic Republic of Congo (DRC). The operator in question was not specified but is understood to be Vodacom, based on a previous announcement from Intelsat. According to a statement from Gilat, the deployment featured Intelsat's CellBackhaul service and Gilat's SkyEdge II-c platform and Capricorn VSATs, with a Ku-band satellite and serves nearly 1,000 underserved and unserved sites in rural DRC. The partnership between Intelsat and Gilat has helped to extend connectivity to areas where terrestrial backhaul networks are impractical, expensive or unfeasible, the provider added. Intelsat GM and VP of Networks, Brian Jakins, said of the project: 'Industry-leading know-how and cost-effective satellite technology from Gilat are key components of the solution, significantly augmenting our ability to bring together the right services, and expertise to provide customers an economical way to expand coverage into remote areas with an unbeatably low total cost of ownership.'

Avanti and Free Strike Satellite Gateway Deal in Senegal

Avanti Communications has signed a five-year partnership agreement with Free which will see the latter firm build and host a new satellite gateway in Senegal for Avanti's HYLAS 4 state-of-the-art Ka-band satellite. HYLAS 4 is Avanti's latest satellite, and the new gateway will extend its coverage to Senegal and the neighboring West African countries of Guinea, Sierra Leone, Guinea Bissau, Gambia, and Liberia, as well as completing Avanti's coverage of Ivory Coast. The expanded coverage will significantly increase access to high-speed satellite internet for the countries' schools, hospitals and communities. The new gateway will also provide satellite backhaul services to Avanti's carrier customers, extending their reach to rural areas and other semi-urban locations where terrestrial networks are currently limited or unreliable. The partnership also aims to have a big impact on education, enabling e-learning services for schools across the region. Free Senegal will build and operate the new gateway from its Tier III data center facility in Diamniadio outside the capital Dakar, adding Avanti as a strategic customer to its growing enterprise business in Senegal and supporting the Government's Digital Senegal 2025 strategy. Pending approval from the Senegalese authorities, the gateway is planned to go live in December 2022. Kyle Whitehill, CEO of Avanti Communications, commented: "This strategic partnership with Free in Senegal demonstrates our commitment to working with local partners in Africa such as Free in order to increase the coverage of our satellite fleet - benefitting countries and territories that are often overlooked when it comes to high-speed broadband."

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