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SATELLITE Markets & Research

Industry Trends, News Analysis, Market Intelligence and Opportunities

# Winds of Change in the Asia-Pacific Satellite Market

By Blaine Curcio

The past 36 months in the Asia-Pacific region, and the world more generally, have been a whirlwind. As the 2010s drew to a close, we had seen global travel increase year after year, while the exchange of information across borders had been growing even more rapidly. Telecoms networks were built to cover large swathes of the developing world, with the 2010s seeing much of the world brought onto, at a minimum, 3G networks.

The 2020s have seen much of everyday life go online, with the Covid-19 pandemic forcing adoption of online schools, work, and in some cases healthcare. At the same time, satellite has been brought into the spotlight across the world. Starlink has not only won major subsidies in the US--$886 million from the FCC's RDOF in late 2020—they have also seemingly captured the imagination of countries in the Asia-Pacific region, including the Philippines, where the NTC was proactive in granting landing rights to Starlink.

All this is to say, in a time where connectivity everywhere is becoming more important, satcom and space are enjoying their moment in the proverbial sun, and this has meant changes in the industry. This year's Asia Satellite Business Week (#ASBW), hosted by Euroconsult as part of the larger Asia Tech x Singapore (ATxSG) show held in Singapore from June 1-3, 2022, showcased the variety of changes happening in the satcom sector, and served as a reminder of the industry's intimacy, but also its rapid growth and increasing diversity.

## New Orders of Magnitude

Having been attending ATxSG conference in various iterations for

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## What's Inside



# Focus on Asia-Pacific and Latin American Markets

After going through a devastating global pandemic for the last two years, there are very encouraging signs that the satellite industry is heading for a recovery. There are, however, also indicators that may point towards a recession. Whether that recession will be global or just affect certain regions or countries remains to be seen.

One thing that is certain is that the resiliency of the global satellite industry lie in the diverse vertical markets and regions that it is active in. In the past, when some verticals like the aeronautical market is down, other vertical step up like the broadband market. The same goes for regions, when some regions are down, others are doing just fine. In this issue we focus on two of the most important regions for the global satelllite industry--Asia-Pacific and Latin America. Our cover story is a detailed report by Blaine Curcio on the recently-held ATxSG show (formerly CommunicAsia) in Singapore which highlighted the trends in the Asia-Pacific market. We also have an executive roundtable on the promising satellite broadband market in Latin America.


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Enjoy this issue.

Virgil Labrador

**Virgil Labrador**
Editor-in-Chief




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### *Asia-Pacific Satellite Market*

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more than 10 years, I was shocked at the change in order of magnitude that we were talking about during the conference. Over the past several years, the order of magnitude with regard to satellite capacity has evolved from tens/hundreds of MHz to single-digit Gbps to now tens and hundreds of Gbps. During a panel I moderated on universal broadband connectivity, James Trevelyan of Speedcast discussed the company's recent announcement of a 13 Gbps addition of capacity to their global network, to around 30 Gbps of bandwidth.

Such was the bandwidth increase, and subsequent need to upgrade ground network, that Speedcast allegedly bought out much of the supply of HPAs for some few months in what was a 90-day sprint to increase total network size by some 80%. In the case of Speedcast, the growth was promising in that it was, according to Trevelyan, brought in part by a recovery in the cruise and energy verticals.

During the same panel, Sri Aradea of BAKTI reviewed plans of their 240 Gbps of capacity on two satellites covering Indonesia, with most of the bandwidth already spoken for. Demand for Indonesia has proven insatiable, with multiple satellite operators having inked deals for multiple Gbps in the archipelago. Elsewhere at the conference, we saw Indonesian company Wahana Telekomunikasi Dirgantra (WTD Networks) sign a deal for an 80 Gbps Ka/Q/V-band satellite with QSTC, while Thaicom also showcased a somewhat firmer plan for an "IPSTAR-2" satellite including some Indonesian component.

***"...Across much of the region, we have seen new orders of magnitude for satellite capacity in Universal Service Offering (USO) programs, and in some cases for mobility and enterprise..."***

Across much of the region, we have seen new orders of magnitude for satellite capacity in Universal Service Offering (USO programs, and in some cases for mobility and enterprise. If ASBW was any indication, we are likely to see a continued uptick in large-bandwidth satcom applications in the region. Just weeks after the conference, we saw the launch of Measat-3d, which includes a well-marketed Ka-band payload focused on consumer broadband and bridging the digital divide in Malaysia. The company has seemingly primed the market well with its Connect Me NOW program, which aims to connect 10,000 sites in the next 3 years involving more than 2 million citizens. Again, these are numbers that would have been unthinkable for satellite just 10 or 15 years ago.

## Supply Chain Challenges and a Changing Industrial Base

One of the somewhat subtler, but nonetheless important themes of the ASBW conference was supply chain challenges, and a changing industrial base. On the satellite manufacturing side, the lead time for GEO satellites has increased to, in some cases, 4 years or more, with this having been brought on by the batch ordering of C-band replacement satellites, a handful of regional and national satellites ordered in fast succession, and broader supply chain impact from LEO broadband constellations.

The supply chain disruptions have also been felt on the ground segment side of things, with one panelist mentioning a factory in Tallinn, Estonia that uses largely Russian and Ukrainian steel and aluminum and which was obviously disrupted. The broader shortage in semiconductors has apparently been felt across the industry, though some companies apparently ordered well in advance. Other companies, such as Astranis, are taking a more vertically integrated approach, with this coming with benefits and drawbacks. While Astranis has greater control of their supply chain and a theoretically more flexible product, their use of software-defined payloads is technologically tricky and requires the world's best software engineers. According to Head of Sales Christophe Bauer, the company's decision to headquarter in the not inexpensive downtown San Francisco is partly driven by a need for the best engineers.

As supply chain has become an increasingly strategic consideration in the satcom sector, the development of a space industrial base has be-

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**Asia Satellite Business Week (#ASBW), hosted by Euroconsult as part of the Asia Tech x Singapore (ATxSG) held in Singapore from June 1-3, 2022, showcased the variety of changes happening in the satcom sector, and served as a reminder of the industry's intimacy, but also its rapid growth and increasing diversity.**

come a bigger priority for countries throughout the region, as discussed by David Tan of the Office of Space Technology and Industry (OSTIn), an offshoot of Singapore's Economic Development Board (EDB), during a fireside chat. The ASBW event saw Tan outline Singapore's SIGNS strategy, namely that the city state plans to:

- See differentiated and disruptive areas of technology
- Identify areas that could be appropriate for targeted investment
- Germinate the ones that are more promising and allow them to grow
- Nurture through providing more funding
- with the desired outcome of Success.

Tan discussed ways that the space industry could help Singapore realize other ambitions, such as optimizing elements of the new Changi Airport Terminal 5, and the Tuas Megaport through increased digitization. Singapore is also apparently cultivating a Center of Excellence at universities for tech transfer and joint R&D development, in an effort to create a more vibrant space ecosystem.

Overall, supply chain and the space industrial base more broadly was a hot topic during the week. Countries are thinking about the space and satcom industries in new ways, and this has created more support for satcom and space companies who can position themselves well in the context of the local industrial base.

A final interesting example was the recent announcements by Starlink in Malaysia. As Starlink was meeting with Malaysian Minster of International Trade and Industry Azmin Ali, Ali noted that "currently, a Johor-based Malaysian company was already manufacturing essential components for the satellites built by Starlink". At ASBW, we learned that moving forward, the most successful global players in the new space economy will, at least in part, be those who can develop local industrial bases while completing and diversifying their own supply chains.

## "Like a Family Reunion"

Finally, as the first major in-person satcom conference in Asia-Pacific for quite some time, there was a certain level of camaraderie and warmth in seeing everyone in person for the first time in 2 or 3 years. A longtime industry friend commented that it felt "like a big family reunion", with a lot of established satellite industry players meeting up for the first time in years. That being said, we also saw a host of new faces and new companies, and saw many of the established players dipping their toe into exotic new areas.

The satcom family is increasingly welcoming laser communications, with companies such as Mynaric being significantly more prominent

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than in years past, and others like WARPSPACE bringing about new business models of laser comms for data relay. Satellite is integrating more closely with the broader computing and telecommunications ecosystem, which is bringing into the sector more people with terrestrial telecommunications backgrounds, and with operators such as Sky Perfect JSAT and KTSAT getting more involved with terrestrial networks via organic initiatives or strategic investments.

## Talking Points for Next Time

The ASBW at ATxSG was a showcase of all that is exciting and new in the satcom and space sector in Asia Pacific. Massive USO programs leading to orders of magnitude more capacity, an increasingly complex and important supply chain and industrial base, and an industry in a stage of growth and change were several of many talking points covered at the conference.

The second half of the year will see another Euroconsult event—the World Satellite Business Week in Paris in September—as well as the return of several other in-person events including the Asia Pacific Satellite Communications Council in Seoul in October, as the industry moves towards a return to normalcy. As we move into a "living with Covid" world, the satcom sector is undeniably changing with the rest of the economy. Based on what we saw at ASBW, these changes are probably creating more opportunities than challenges, and at least for the short-medium term, we are likely seeing positive winds of change for the satcom sector.

A final observation: the absence of Chinese companies. As Covid-19-related lockdowns have eased across most of the world, including APAC countries that have been historically cautious, there was a conspicuous absence of Chinese companies at the conference, with a couple of exceptions being Starwin of Chengdu and APT Satellite and AsiaSat of Hong Kong. It will be worth paying attention to the continued absence—or not—of Chinese space companies at global conferences.

**Blaine Curcio** is Founder of **Orbital Gateway Consulting** (OGC), a research and consulting firm focused on the Chinese space industry. In this role, Blaine oversees a variety of research into Chinese commercial space industry fundraising, market sizing, industrial base development, and governmental policies, for clients including commercial space companies, governmental institutions, financial institutions, and consulting firms. OGC is building out the first comprehensive suite of Chinese space industry data points in a series of databases available to subscription clients. Based in Hong Kong, he maintains close relationships with the local space ecosystem in Asia-Pacific, including regular collaboration with the Asia Pacific Satellite Communications Council (APSCC) and the Hong Kong Orion Astropreneur Space Association (OASA). He is a Senior Affiliate Consultant with Euroconsult where he focuses on the global satcom industry, and is a regular moderator and contributor to the Euroconsult World Satellite Business Week. He can be reached at: blaine@orbitalgatewayconsulting.com.

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# The Latin American Broadband Satellite Market

by Bernardo Schneiderman

The Latin America broadband satellite market continues to grow with not only the geostationary satellite operators expanding their coverage with HighThroughput Satellites (HTS) but the coming of new Low Earth Orbit (LEO) constellations like Starlink (Space X), Oneweb and Kuiper (Amazon) that are making inroads into the Latin American market.

Historically, the satellite market in Latin America focused on the video and cellular backhaul markets but in the last five-year major players like Hughes and Viasat started offering broadband services for residential and enterprise user and government agencies in the region.

NSR's latest report about the VSAT and broadband satellite market revelaed that HTS is a major market growth factor, moving this segment from 800 Gbps in 2020 demand to 15 Tbps in 2030 and mentioned that the market will hit cumulative revenues of US$ 135 Billion over the next decade, with significant demand in evolving consumer broadband and social inclusion segment leading the opportunities.

Governments in major countries in Latin America are supporting the satellite market to expand the penetration in remote and rural areas that are not being served by terrestrial networks with major plans are being implemented in Argentina, Brazil, Peru, Colombia, Mexico and some Caribbean countries.

Currently we have the following key satellite operators and service providers offering broadband in the Latin America region including: ABS, Eutelsat, Hughes, Hispasat, Intelsat, SES, Embratel StarOne, Telesat and Viasat, among others.

By country, Latin American government satellite operators and services providers are listed as follows:

Argentina: ARSAT – Government Agency provides capacity and services in C and Ku-Band with two satellites focusing on remote areas and for use by government agencies

Bolivia: TKSAT-1 is operated by the Bolivia Space Agency and provides services for government agencies and for remote areas in Ku-band

Brazil: SGDC satellite operate by Telebras (Government-owned company) provides capacity and services in Ka-band with a commercial cooperation with Viasat and X-Band for the Defense Ministry.

Mexico: The Mexican Satellite System, also known as Mexsat, is a network of three satellites operated by the Mexican government's Ministry of Communications and Transportation. It provides services to the defense department and most

government agencies and provides connectivity to remote regions where no service is available. Mexsat-1 and Mexsat-2 are twin satellites used for mobile communication devices and operate in the L- and Ku-bands. Mexsat-3 operates in the range of the extended C and Ku-bands.

Venezuela: Venesat-1 is operated by Venezuela's Ministry of Science and Technology and provides services to government agencies and remote areas in Ku and C-band.

Satellite Executive Briefing (SEB) invited executives from the key satellite players in the region in a virtual executive roundtable to shed light on the Latin American satellite broadband market. . We received feedback from **Sergio Chaves**, Business Development Director for South America-**Hispasat**; **Ramesh Ramaswamy**, EVP and General Manager, International Division, **Hughes**; **Ricardo La Guardia**, RVP LATAM Sales, **Intelsat**; **José Antonio Gonzalez**, Satellite Network Product and Project Manager at **Embratel** and **Lincoln Oliveira**, Director General **Embratel StarOne** ; **Dolores Martos**, Regional VP Sales Latin America & Caribbean, **Telesat**: and **Leandro Gaunszer** – General Director of **Viasat Brazil.** Excerpts from the virtual roundatble are as follows:

***Satellite Executive Briefing (SEB): How are you addressing the Broadband Satellite Market in Latin America.? Please give us some examples of satellite capacity or product and services you are offering in the region.***

**Hispasat:** HISPASAT enables broadband satellite services in a simple and efficient way. We propose different business model adapted of needs of each client, from space capacity to managed services. Few months ago, HISPASAT has launched Wave, a new generation of flexible managed wholesale services, for service providers, telecommunications operators and governments where we combine our satellite fleet with an extensive terrestrial infrastructure to meet the connectivity needs.

We use our expertise and local partnerships to ensure connectivity in unconnected areas, providing reliable broadband services in rural communities with the highest performances. We believe in the transformational benefits connectivity can bring to society to solve the challenge of the digital divide.

Today, HISPASAT Wave manages more than 45Gbps of capacity, enabling leading service providers to connect more than 13,000 terminals and hundreds of thousands of people to the internet.

**Hughes:** We have a long and proud history serving Latin America. We've had a presence in in Brazil for more than 50 years and have been in Mexico for nearly 25 years. Hughes owns several satellites that provide Ka-band high-throughput capacity across the region, including Hughes JUPITER™ 2, Hughes 63 West, Hughes 65 West and Hughes 20 West (through a joint venture with Yahsat for service in Brazil). Our approach to the market in the region is three-fold. First, we offer our consumer satellite internet service, HughesNet®, to consumers and small business in Brazil, Chile, Colombia, Ecuador, Mexico and Peru. Second, for customers who cannot afford the cost of a monthly subscription service, we offer digital divide solutions such as Community Wi-Fi Hotspots and cellular backhaul by satellite to extend mobile network reach to more subscribers. And third, we have a growing enterprise business across the continent, with managed network services for distributed enterprises.

As examples, our JUPITER System ground services platform was recently selected for more than 7,200 sites


**HughesNet delivering a terminal in Colombia**

**Hispasat's Amazonas 5 satellite offering Ku and Ka-Band capacity for the Americas.**

across Mexico by Stargroup, Apconet/Aitelecom, Eurosat and Globalsat to fulfill a government connectivity program. In April, SDT Ingenieria announced it will deploy Hughes equipment and service to connect 670 schools in Colombia to help bridge the digital divide in the Antioquia Department in the mountainous, rural Medellín region where terrestrial connectivity is lacking.

**Intelsat:** Intelsat is focused on B2B connectivity market and not the consumer broadband market

**StarOne:** The Broadband Satellite Market is very important to Embratel. Embratel is addressing this market in two ways. The first and major one is providing backhaul access for the Mobile Network. We consider this approach very effective, since it simplifies the adoption of broadband by the consumer market. The second one is providing individual satellite access for corporate and SME customers. This includes also providing services for rural schools.

**Telesat:** Telesat has been working collaboratively with customers in Latin America for decades to deliver critical connectivity solutions that tackle the region's most complex communications challenges, providing powerful advantages that improve their operations and drive growth.

Telesat was at the forefront of developing state-of-the-art high throughput satellites (HTS) such as Telstar 19 VANTAGE in geostationary orbit (GEO). With a combination of high-power Ku-band spot beams and broad regional beams, plus optimum elevation angles, LATAM customers have increased flexibility with more efficient bits/Hz solutions and improved economics.

Telesat is actively involved in Digital Divide programs, providing backhaul satellite capacity to leading service providers that bring valuable connectivity to rural communities across Latin America in support of Ministries of Telecom and Education throughout the region. Notable programs that Telesat has supported include Gesac in Brazil, MinEdu in Peru and Kioscos Digitales in Colombia. Additionally, several Telesat satellites provide unique beams that deliver connectivity between continents, which is a key differentiator for oil and gas, maritime and inflight connectivity markets.

**Viasat:** Viasat offers broadband access in Latin America, mainly in remote areas or where telecom operators have no presence. The company has partnerships in different countries to deliver broadband.

In 2022 Viasat plans to launch the first-of-three satellites of the ViaSat-3 constellation. With 1Tbps (Terabit per second) capacity and higher speeds on each of the three satellites, the constellation will be able to offer unprecedented global coverage, in addition to improvements to existing services, such as higher quality streaming and enhanced service reliability on land, air and sea. The first satellite will cover the entire American continent.

The main benefit is that it does not require an extensive infrastructure network, usually present only in large urban centers. So even people in hard-to-reach locations can connect to the internet with high-speed, quality service.

In addition, Viasat's service has specific advantages in its plans, such as higher speeds and more data capacity per month, compared to other satellite ISPs in both Brazil and Mexico, for example.

***SEB: What country(ies) or region(s) in Latin America are you expecting more and potential long-term growth?***

**Hispasat:** Latin America is a key market for HISPASAT, countries like Mexico and Brazil have experimented a


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significant growth over the last years and we expect that this tendence will be maintained. But not only these ones, Peru, Colombia and Central America countries also have great opportunities.

**Hughes:** We are very optimistic about our growth in Latin America. ABI Research notes that 77 million people in Latin America live in rural areas and estimates the serviceable addressable market for satellite communications in the region will grow to 28.2 million premises by 2026! To help meet that demand, we're building the JUPITER 3 satellite, which is currently under construction and expected to launch in early 2023, bringing 500 Gbps of additional capacity across the Americas.

One area of expected growth is our Community Wi-Fi Hotspot program, and Hughes Express Wi-Fi in particular. At thousands of locations across Latin America, our JUPITER equipment is in use for shared Wi-Fi services at schools, community centers and other commercial and government sites – usually as part of a government program. Our Express Wi-Fi solution takes the concept one step further, with a turn-key offering that empowers local merchants to operate Community Wi-Fi Hotspots for their neighbors and customers. We already have more than 2,300 of these Express Wi-Fi hotspots in operation – with merchant 'hosts' selling the internet access to their customers on a per-use basis.

We recently made a pledge to the International Telecommunications Union (ITU) to invest $2.2 million in Hughes Express Wi-Fi in 2,000 more communities in Latin America by the end of 2024.

**Intelsat:** In alphabetical order: Argentina, Brazil, Chile, Colombia, Ecuador, Peru, and Mexico

**StarOne:** Brazil has been very important for our broadband business, but also other countries like Chile, Colombia and Peru have recently caught our attention as very interesting markets to be analyzed.

**Telesat:** There is exponential growth in global IP data traffic, which is forecasted to continue to double every three years. In Latin America, traffic growth is driving by 4G and 5G adoption and coverage buildout, and expected to reach over 35 GB mobile data traffic per smartphone each month. Satellite backhaul will be key to expand the reach of 4G/5G networks in every country due to the challenging geography of the region. Government initiatives continue to play an important role in bringing connectivity to unserved and underserved communities. Low-latency connectivity via Telesat's next-generation LEO network, Telesat Lightspeed, is uniquely positioned to bring affordable multiple-Gbps data links to every country in the region to accelerate the reach of 4G/5G.

**Viasat:** Viasat has a strong commitment to all markets in the long term. The company currently has the highest speeds and bigger data capacity offered in national satellite markets. Satellite technology is a strong player in driving connectivity improvement in larger countries such as Brazil and Mexico. With the arrival of ViaSat-3, we expect to expand to other markets within Latin America.

***SEB: Do you have any specific solutions for the Enterprise/Government and Residential market for Broadband via satellite?***

**Hispasat:** We have gained a reputation over the last 25 years for excellence with a 'personal touch', our Portfolio of space capacity and managed services cover a wide range of solutions.

In the data market we provide capacity and managed services for a variety of market verticals that includes internet access via satellite, cellular backhaul, Wi-Fi hotspots, broadband mobility as well as telemedicine and teleducation. We have also defined added value solutions for IoT and emergencies, where the satellite is a key player.

In the video market, HISPASAT offers solutions and services for Direct To Home, distribution and contribution.

**Hughes:** Hughes provides a variety of broadband connectivity solutions in Latin America. We offer HughesNet to small business and residential customers across Brazil, Chile, Colombia, Ecuador, Mexico and Peru. We also provide broadband support to enterprises and governments throughout the region and cellular backhaul support for mobile network operators (MNOs). Through Community Wi-Fi solutions, Hughes helps governments and MNOs bridge the digital divide and meet connectivity requirements.

Satellite is an ideal connectivity solution for aeronautical, land mobile and maritime applications. As an equipment supplier, systems integrator and service provider, we offer global mobility solutions that take advantage of both geostationary (GEO) and non-geostationary orbit (NGSO)

solutions like Low Earth Orbit (LEO) satellites. In fact, we recently introduced a new, first-of-its-kind, electronically steerable, flat panel antenna for LEO applications. GoGo Business Aviation will be the first to use the new antenna technology for their business jet offering using LEO capacity from OneWeb.


**Intelsat:** We typically provide wholesale services to service providers who turn around and deliver something to those end customers. A lot of our services are tailored in some way to cater to the particular needs of end-customers in different segments, in the way that FlexMaritime is a little more relevant for maritime users and FlexExec for a certain type of aero customer. We do incorporate connectivity to the internet as part of almost all of our managed services, and direct connectivity to the cloud for a subset of those. CellBackhaul is specifically about providing a service for mobile/cellular network operators so it's easier for them to use satellite for backhaul, and AgileCore UX is often used for backhaul of internet and voice traffic and includes optimization capabilities. I think all of these could be examples, it's just that they are not sold directly to those retail customers.

**StarOne:** Embratel has several satellite solutions but as mentioned before backhaul and individual accesses are the main solutions we have for this market.

**Telesat:** Telesat provides enterprise-class connectivity for leading media, telecom, government, maritime and aeronautical customers. In addition to providing backhaul connectivity for each of these vertical markets, Telesat provides satellite capacity for leading DTH operator TuVes, with more than 400,000 subscribers in South America, Central America and the Caribbean. Telesat satellite capacity also supports HughesNet Ka-band residential services across South America.

**Viasat:** In Brazil, for example, we integrally operate with all types of customers and segments - among the main ones are residential, large companies, SME, air and sea connectivity, as well as connectivity for government programs.

Viasat offers a variety of plans across Brazil's different regions which enable its customers to choose the plan that meets their connectivity needs. Viasat's high-valued plans offer a competitive price-point per Gigabyte and its Infinity plan offers the country's highest speeds (30 Mbps) with a high-speed data allowance of up to 160 GB per month. Additionally, Viasat's plans also offer a free Wi-Fi router that effectively distributes its reliable internet throughout its customers' homes.

The company also has partnerships to offer corporate connectivity services (TGS, Telefonica Global Solutions), commercial aviation (Azul, with the first free onboard Wi-Fi service in the Brazilian market), and business aviation (available for Embraer and Bombardier aircraft, for example). Viasat also offers technical and installation support for the Federal Government's satellite connectivity projects in the country (GESAC, Wi-Fi Brasil).

***SEB: With the implementation of 5G in Latin America, what kind of solution are you bringing to the market to address this development?***

**Hispasat:** The 5G ecosystem is a new paradigm in wireless communications and will be an important pillar in the digital transformation of society and the economy worldwide over

the next decade.

Satellite backhaul is an ideal solution to speed up the deployment of mobile networks and its connection to the backbone network.

Currently 5G is still far to be widely deployed in Latin America, but we expect that in the coming decades, more and more countries in the region will adopt this technology.

We believe that satellite will be crucial to extend the 5G coverage to the rural or remote areas.

HISPASAT, in collaboration with local partners, has defined flexible business models to provide satellite backhaul services, combining space capacity, managed services and end to end solutions.

Telesat's Lighspeed satellite.

**Hughes:** Hughes has been providing satellite backhaul solutions for cellular networks for many years – first for 2G then 3G and 4G. 5G deployments are likely to follow the same path as the others: beginning in dense urban areas that are easy for terrestrial providers to serve, then gradually expanding to ex-urban and rural regions. No matter when an MNO plans to deploy 5G, our JUPITER System is ready. We have tested and validated the platform's capability to interoperate with a 5G open radio access network system and any 3GPP standards-based, standalone deployment. This means that an operator that chooses the JUPITER System today can be assured of a future-ready solution with a clear path to 5G.

In addition to backhaul, Hughes has pioneered private 5G deployments for enterprise networks. For instance, in March of this year, Hughes was awarded a contract by the U.S. Department of Defense to deploy a standalone 5G network at Naval Air Station Whidbey Island in Washington state.

While the 5G market may not be as far along in Latin America, companies that kept 5G spectrum and are awarded licenses for 5G are generally obligated to provide 4G services to rural areas, where we can serve as a partner in providing backhaul solutions for non-5G obligations as well.\

Intelsat: Intelsat will maximize the 5G technology to further expand the market reach on the mobile and enterprise markets. The focus will be the Edge Server Connectivity, Fixed Backhaul to Remote Locations, 5G on Moving Platforms, and IoT Service.

**StarOne:** Embratel is betting again that backhaul will be the main driver for the increase of satellite solutions for this application (5G). Specifically in Brazil, not only 5G but also 4G obligations that were included in the last frequency auction leaded by ANATEL (Brazil's National Telecommunications Agency) will drive the market to the use of satellite solutions like backhaul access.

**Telesat:** 5G presents plenty of opportunities for both enterprises and consumers. But delivering 5G capabilities to consumers, especially rural consumers, in a timely and cost-effective manner requires a backhaul link to connect communities to the mobile operator's core network.

Today, Telesat's HTS capacity is available to serve 5G backhaul requirements as they evolve throughout the region. In the future, Telesat Lightspeed, our advanced LEO network will provide unprecedented capacity and affordability to meet 5G network expansions to even the most remote communities. With latency on par with today's fibre networks, telecom operators can leverage Telesat Lightspeed satellite backhaul to provide universal, city-like high-speed connectivity.

Telesat Lightspeed offers MEF standards-based (plug and play) interfaces, simplifying the telecom operator rollouts for 5G fixed wireless broadband to homes and enterprises, as well as mobile networks.

**Viasat:** In principle, very little will change since the 5G offering should initially be concentrated in large urban centers and cities where 4G is congested. The main attraction of satellite internet is to bring high-speed and quality connectivity to distant places where internet access options are scarce and where some people have never connected to the internet.

But we understand that the establishment of 5G in the countries opens several new opportunities, such as using the satellite as a backbone for the 5G network or complementing connected remote regions. The 5G auction, which requires connectivity investment in 31,000 km of roads, also shows the weight of infrastructure projects in a country of continental dimensions like Brazil, both in coverage and capacity.

***SEB: Anything else you would like to add?***

**Hughes:** In addition to operating the largest Ka-band fleet in the region and the de facto industry standard for satellite ground systems in the JUPITER System, Hughes is also a leading managed services provider for enterprise networks. In fact, we've been recognized for market leadership in Managed SD-WAN by industry analysts including Gartner and Frost & Sullivan. As enterprises grow to depend on their networks for everything from point-of-sale transactions to payroll – and with cloud connectivity in between – Hughes helps design, deploy, optimize and secure the multi-transport solutions to help them achieve their business objectives, combining the best available transport at every site into a cohesive, enterprise-grade network. In addition to managing the largest satellite network in the world, with more than a million end-points, we have nearly half a million enterprise sites, including more than 50,000 SD-WAN sites, under management worldwide. We've expanded our satellite network capabilities into managed network solutions and meaningful partnerships with, not just mobile network operators, mobility providers and telcos, but retailers, banks, restaurant chains, petroleum systems, government offices, and other businesses that count Hughes as their connectivity partner of choice.

**StarOne:** The years ahead will show how the traditional GEO solutions will handle the new LEO solutions. Embratel believes that for backhauling, the GEO solutions seems to fit better than LEO considering the SLA needed by this type of application. On the other hand, for the individual user, the LEO solutions available now will be very difficult to be beaten by GEOs, even considering the new promised Tbps in GEO satellites.

Embratel has the largest satellite fleet in Brazil and Latin America. Embratel currently operates five satellites: Star One C2, Star One C3, Star One C4, Star One D1 and Star One D2. The most recent satellite launched is Star One D2, which guarantees the offer of new satellite capacity in Brazil and Latin America. Star One D2 is equipped with C, Ku, Ka and X Bands to meet the most varied demands of the market, such as Pay TV, enterprise connectivity, cell phone backhaul, as well as to increase the performance of data applications, video and Internet of the business market. With a power of 19.3 KW and weighing 7 tons, Star One D2 occupies an orbital position of 70° W and is equipped with 28 transponders (receivers and signal transmitters) in C Band, 24 transponders in Ku Band and payloads in Band Ka and Band X.

Embratel has a broad portfolio of services and has the largest satellite offer in Brazil. As an example of the services, Embratel can provide a corporate network connection via satellite; high-quality data network to connect all company units to headquarters for real-time information sharing; high-speed satellite internet and satellite TV signal distribution, and broadband.

**Telesat:** While today GEO satellites deliver critical connectivity throughout Latin America, their orbit location, 36,000 kilometers from Earth, means that the round-trip time for data to travel to the satellite and back to the core network negatively impacts the Internet user experience. This data delay also impacts the ability to access secure web pages, cloud-based applications and online gaming.

Designed in collaboration with our enterprise customers, the Telesat Lightspeed network will be 35 times closer to Earth, with ultra-low 50 millisecond round trip latency – on par with today's fiber networks.

The global Telesat Lightspeed network is seamlessly connected to terrestrial networks. The terrestrial rollout of Telesat Lightspeed landing stations is already underway. Cobham SATCOM has been selected to provide the Landing Station antennas and Satixfy is building the baseband modem equipment. Multiple Landing Stations will be located in Latin America and connected to leading Points of Presences (PoPs) throughout the region.

Bernardo Schneiderman is the Principal of Telematics Business Consultants. He can be reached at: info@tbc-telematics.com

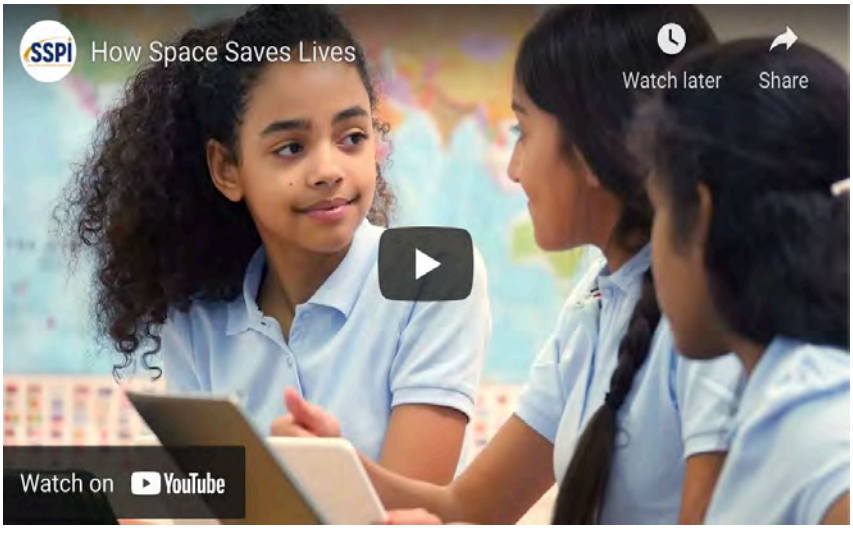
FEATURE

# How Space Saves Lives

## *Do your children know about the lives you save in space?*

You know it and I know it. But do your children, your family and friends know it?

People who work in space and satellite are in the business of savings lives. Not just disaster response, though that is a critical role we play. We help feed people, connect them, educate them, heal them, keep them safe and keep the systems, from water to electricity, that support their lives. The fact that so few people outside our industry know its contributions to the world is a real problem when it comes to attracting investment, penetrating new markets and recruiting new talent.




That's why SSPI launched its Better Satellite World campaign in 2016 (www.bettersatelliteworld.com). With the help of our industry's companies, media partners and other organizations, the campaign is making a difference in how the industry communicates its value to investors, to present and future customers and to the young talent we so badly need to fuel growth.

A recent video in the Better Satellite World series, "How Space Saves Lives," aims at young people in middle school and high school. It is a chance for us to share what we really do all day – not calculating link budgets or designing propulsion systems – with the people who will follow us into the most exciting technology industry in the world.

Here's how the story starts:

*These days, the people of Earth are launching more than 100 rockets into space every year. They fly upward from North and South America, Europe and Asia.*

*A few of them carry astronauts – but most rockets put satellites into orbit to work for us on the ground. And the most impressive thing satellites do – thousands and thousands of times each year – is to save people's lives.*

*How can a satellite in space save people on the ground? It's not magic. It's the imagination, daring and determination of thousands of people who work in the space and satellite business.*

This is one of three videos for school-age kids developed with the support of Hunter Communications. Each explains the big role of space and satellite in their daily lives. We will be sharing them with science teachers around the world as enrichment material beginning with this year's World Space Week starting on October 4. These are the years when young people are beginning to choose a future, which makes it the ideal time to bring STEM content into their lives. You can do your part by offering to visit classrooms in your community, talk about your work and show a video or two. Most schools and teachers welcome such real-world content because it energizes their students. The value to you? Priceless.

Produced for Satellite Executive Briefing by Space & Satellite Professionals International.
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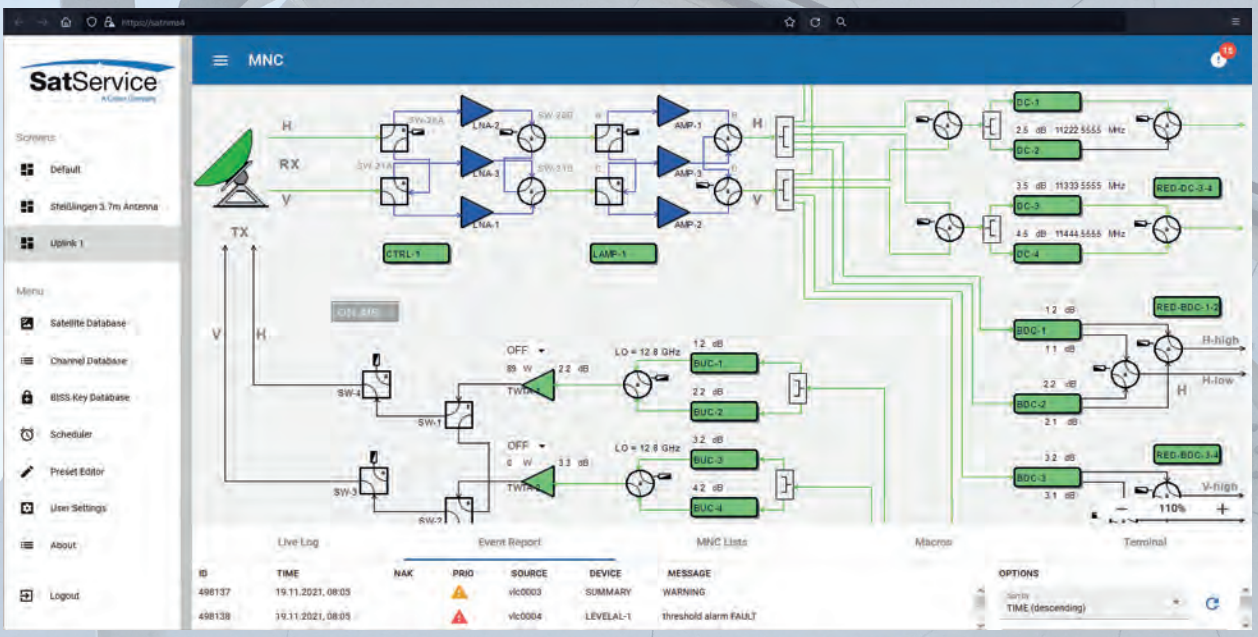



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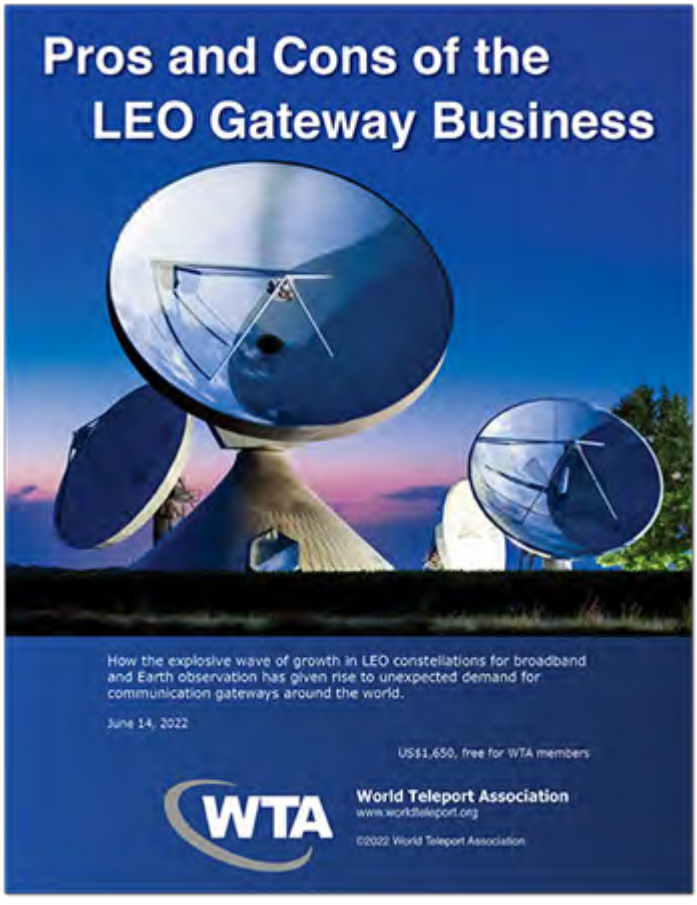
OPINION

# Is Hosting LEOs a Good Business?

by Robert Bell

Satellite sector veterans recall the first wave of low-Earth orbit (LEO) satellite efforts that began in the late 1990s and fizzled out by the early 2000s. The "fizzle" followed the spectacular $5 billion bankruptcy of the enormously ambitious Iridium mobile constellation, one of the 20 largest bankruptcies in US history. Investors headed for the exits, other ambitious concepts were shelved, and the very idea of LEO constellations was discredited for years to come.

Two decades later, a new wave of LEO constellations is being deployed and generating equal if not greater levels of enthusiasm than before. The new confidence of operators and investors is based on many factors: drastically lower launch costs, the arrival of mass production for small satellites and seemingly limitless growth in demand for broadband that puts Iridium's market forecasts in the shade. Investors have been lured back into the market by dozens of LEO constellations of varying sizes that plan to expand the services they provide beyond broadband and voice communications to include broadband connectivity, low-bandwidth Internet of Things (IoT) services and Earth observation to enterprises, governments and consumers. But even so, at SATELLITE 2020, Elon Musk described his goal for the Starlink services as "not going bankrupt."




## How Big Will It Be?

There is no shortage of forecasts that promise great things from the LEO market over the next decade. The low-end of market growth projections see the sector surpassing $2 billion in the immediate future due to the increasing adoption of LEO services by a variety of sectors and customers, as well as greater integration into the larger communications sector overall. And more optimistic forecasts that attempt to measure the broader impact of LEO satellite services see the global impact approaching $10 billion today and nearing $20 billion by 2026.

This new LEO revolution is having an impact on the teleport sector, and there is optimism among operators, service providers and technology vendors that a sizable, long-term business opportunity is developing. But success is far from guaranteed. The LEO operators still need to close their business models, and the teleport sector is navigating a range of new requirements and operational models.

## The Teleport Opportunity

For traditional teleports, supporting LEO customers will require new operations, with antennas that can cover the full sky rather than just the equatorial arc. The data centers

***"...This new LEO revolution is having an impact on the teleport sector, and there is optimism among operators, service providers and technology vendors that a sizable, long-term business opportunity is developing..."***

will also need to be reconfigured to handle greater amounts of throughput. This will require the teleport sector to work with the LEO operators—and the requirements may differ greatly from operator to operator.

That led World Teleport Association to commission a research report exploring the realities of the LEO gateway business. In interviews with teleport operators, tech companies and constellation operators, we explored typical requirements for hosting gateways, the future growth potential in the business, and the benefits and disadvantages of hosting gateways.

**Robert Bell is the executive director of the World Teleport Association (www.worldteleport.org), which conducts research into the teleport and satellite industry and offers Quality Assessment and Teleport Certification programs to service providers. He can be reached at rbell@worldteleport.org**

**Pros and Cons of the LEO Gateway Business is available for free to members and for sale to non-members at https://www.worldteleport.org/store/viewproduct.aspx?id=20420325.**

**A webinar based on the report is available free on demand at https://www.youtube.com/watch?v=3CnMuAHsbH0.**

# Celebrating Satellite's Quarter Century Past: Protecting the Space Century Ahead

**by Martin Jarrold**

GVF was founded 25 years ago and during 2022 we have been celebrating the association's silver anniversary. GVF's milestone achievements over this 25-year period have helped advance deployment of space and ground segment components of satellite-based solutions to meet the world's communication needs. The last quarter century has seen tremendous growth in those needs, as well as in the ability of evolving satellite space and ground segment technologies to provide those solutions with increasing efficiency and cost-effectiveness.


The satellite industry which has created and developed these evolving technologies has changed and grown much in 25-years and any timeline of specific events which attempts to illustrate this change and growth will inevitably suffer from the failure of multiple omissions. Nevertheless, GVF has noted a few key milestones which occured since its own creation. These milestones include the orbiting of the original Iridium's first five satellites in 1997, the privatisation of the satellite Inter-Governmental Organisations in 1999-2001, the launch of the first HTS satellite (IPStar/Thaicom 4) in 2005, the Intelsat acquisition of fellow fixed satellite service (FSS) provider PanAmSat in 2006, the maiden flight of the SpaceX Falcon 9 launch vehicle in 2010, the first commercial flat panel electronically steerable antenna using metamaterial surface technology in 2017, the 2018 acceleration of the HTS market as LEO satellite and IoT applications "took off", the SpaceX launch of the first Starlink constellation satellites in 2019, and in 2020 the satellite operators taking the FCC C-band deal, and the MEV-1 mission validating GEO in-orbit servicing.

Despite the certainty of multiple omissions, a list even as brief as this does serve to bring perspective to just how far the industry has come, and it is the industry's amazing journey – as well as GVF's history – that led to our decision to establish the GVF Quarter Century of Excellence Award. After a period open for public nominations and an initial selection of five Award finalists recognised as industry leaders – Eutelsat, Hughes Network Systems, Inmarsat, Kratos, SES – the decision as to which finalist is the best of the best is now in the hands of a group of five independent jurors.

To help facilitate the jurors' decision an online event featuring a representative of each finalist presenting their company's candidacy took place on 6 July. The discussion and Q&A session, chaired by David Meltzer, GVF Secretary General, and Pacôme Révillon, CEO of Euroconsult, featured Natal Lettieri, Chief Service Operations Officer, Eutelsat; Sharyn Nerenberg, Vice President, Corporate Marketing & Communications, HNS; Alison Horrocks, Chief Corporate Affairs Officer & Company Secretary, Inmarsat; Stuart Draughtridge, Vice President of Advanced Technology, Kratos Space;

and Stewart Sanders, Executive Vice President Technology & O3b mPOWER Programme Manager, SES.

Following the online event the jurors are considering their final decision, with that decision to be publically announced, and the Award presented, on 14 September 2022 at Euroconsult's World Satellite Business Week Gala event in Paris, which is also celebrating its 25th year.

It is implicit in any celebration of this kind that we are not looking to the past as something which can afterwards be neatly filed away. The past has more value to offer than that, particularly for providing guidance in developing lessons for the future – lessons we now need more than ever.

In previous columns I have considered the importance of various issues pertaining to the sustainability of human activity in space, issues that are part of a wider core dialogue concerning preserving the entirety of the environment surrounding us. Space must remain sustainable. We must well-manage Earth's vital orbital resources.

Donald J. Kessler's eponymous cascading collisions syndrome goes all the way back to 1978, a time when the occupation of geostationary orbital positions by commercial communications satellites was still in its infancy. In the following decades the GEO orbital arc became progressively busier but, as I've written here before, it is characterised by our continuing good husbandry. The principle issue now is that non-GEO orbital space is becoming congested, with a potential 100,000-plus satellites by the end of this decade adding to the debris already orbiting. Will our good husbandry of GEO be repeated for LEO?

This is a new space management challenge – a challenge to which our industry must respond. But it is not only a space management challenge, it is also a new Earth management challenge. Low Earth Orbit congestion does not only relate to and potentially impact the future of satellite communications. The LEO environment is where many new Earth Observation satellites operate, the platforms on which we are increasingly coming to rely to monitor the physical evidence of climate change and environmental degradation. It is this data that will help us better manage our planet's limited resources and stave off existential disaster.

Climate change is unquestionably a major consideration in this context, but so is the business economics bottom line. The GVF Quarter Century of Excellence Award has as one of its jury decision parameters a requirement that the various candidate company's achievements – as well as having had a beneficial impact on the broad telecommunications sector and on society – have exhibited a contribution to the corporate financial bottom line. The financial bottom line in the preservation of orbital space is illustrated in the growing size of the space economy.

Recent evidence from the US Satellite Industry Association illustrates just how big the space economy has become. SIA's analysis of 2021 'Global Satellite Industry Revenues' puts growth at 4 per cent and the size of the global space economy at US$386 billion, with the satellite industry representing 72 per cent of this figure at US$279 billion. This latter figure is further broken down into US$118 billion for Satellite Services (telecommunications and remote sensing), US$142 billion for Ground Equipment (network and consumer), US$13.7 billion for Satellite Manufacturing, and US$5.7 billion for Launch.

There are, of course, examples of the satellite industry rising to the challenge of sustainably managing space. In an earlier column I referenced, albeit only briefly, the 'Space Sustainability Rating' (SSR), an innovative and practical tool to support space actors in designing their missions and managing their operations more sustainably and responsibly. It was officially launched on 23 June 2022 at the SWF/UK Space Agency 'Space Sustainability Summit' in London, and "aims to recognize, reward, and encourage space actors to design and implement sustainable and responsible space missions to ensure the long-term sustainability of the space environment. It provides a unique rating system enabling space actors to comprehensively and transparently assess their missions' impact on the space environment and other operators, as well as practical guidance on how to improve sustainability performance & practices." (Quoted from a press release issued by the EPFL Space Centre – eSpace Consortium – https://espace.epfl.ch/2022/06/23/space-sustainability-rating-is-now-live/)

More information about EPFL and the SSR is available at https://espace.epfl.ch/. It is very important reading for our times and affords us the opportunity not to repeat our Earthly mistakes in space.

**Martin Jarrold** is Vice-President of International Program Development of GVF. He can be reached at: martin.jarold@gvf.org

# Eutelsat to Merge with OneWeb

Paris, France, July 25, 2022--Eutelsat and key OneWeb shareholders sign a Memorandum of Understanding with a view to combining Eutelsat and OneWeb in an all-share transaction. Eutelsat shareholders and OneWeb shareholders would each hold 50% of the Eutelsat shares. Eutelsat will combine its 36-strong fleet of GEO satellites with OneWeb's constellation of 648 low Earth orbit satellites, of which 428 are currently in orbit.

Eutelsat describes the deal as a "transformational" transaction, built on the foundations established in April 2021 with Eutelsat's initial investment in OneWeb, The transaction would be structured as an exchange of OneWeb shares by its shareholders (other than Eutelsat) with new shares issued by Eutelsat, such that, at closing, Eutelsat would own 100% of OneWeb (excluding the 'Special Share' of the UK Government). OneWeb shareholders would receive 230 million newly issued Eutelsat shares representing 50% of the enlarged share capital.

The potential transaction builds on the deepening collaboration between Eutelsat and OneWeb, begun with the equity stake acquired by Eutelsat in OneWeb in April 2021, the global distribution agreement between Eutelsat and OneWeb announced in March 2022, and the new exclusive commercial partnership , addressing mainly the European and global cruise markets, signed today.

Commenting on the combination, Dominique D'Hinnin, Eutelsat's Chairman said "I am delighted to announce this new and significant step in the collaboration between Eutelsat and OneWeb. Bringing together our two businesses will deliver a global first, combining LEO constellations and GEO assets to seize the significant growth opportunity in connectivity, and deliver to our customers solutions to their needs across an even wider range of applications. This combination will accelerate the commercialisation of OneWeb's fleet, while enhancing the attractiveness of Eutelsat's growth profile. In addition, the combination carries significant value creation potential, anchored on a balanced mix of revenue, cost and capex synergies. The strong support of strategic shareholders of both parties is a testament to the huge opportunity that this combination offers and the value that will be created for all its stakeholders. This is truly a game changer for our industry."

Sunil Bharti Mittal, OneWeb's Executive Chairman said "Having played a pioneering role in providing connectivity in the emerging world, I am excited about the possibilities of connecting the unconnected. The combination of Eutelsat and OneWeb represents a significant development in that direction as well as a unique GEO/LEO combination. The positive early results of our service together with our strong pipeline represent a very exciting opportunity in the fast-growing satellite connectivity segment, especially for customers requiring a high speed, low latency experience. Our customers are actively seeking a combined GEO/LEO offering leading us towards this important step. Bharti, as the lead shareholder of OneWeb, along with other key shareholders, is looking forward to playing a meaningful role in providing expanded connectivity through the combintion of OneWeb and Eutelsat."

# SES and Intelsat Merger Talks?

Luxembourg City, August 4, 2022- The number 1 and number 2 leading global satelltie operators, SES and Intelsat are reportedly engaging in possible merger talks according to various media reports. The story was first released by the Financial Times. The merger, if borne into fruition will create the largest satellite company in the world with over 100 Geostationary satellites generating over US$ 4 Billion in annual revenues.

The satellite industry has seen a number of major mergers among satelltie opeartors, most recently the merger of Paris-based Eutelsat and Low Earth Orbit (LEO) operator OneWeb. Last year, US-based Viasat acquied UK satellite operator Inmarsat. According to the Financial Times article, the SES-Intelsat merger may be the result of the growing LEO sector led by Billionaire Elon Musk's Starlink system.Against a backdrop of accelerating integration of terrestrial and satellite networks, as well as the rapid expansion of space activities.. .

## MetaBroadcast appoints Mackinlay as New CEO

Jamie Mackinlay

**London, UK, August 4, 2022** – MetaBroadcast, the UK's leading metadata specialist, announced the appointment of Jamie Mackinlay as CEO. Mackinlay is a proven media tech business leader, with significant experience in creating, mentoring and managing high-performing teams.

Mackinlay has had several executive roles in leading media technology companies, including Amino, ADB Global and Singula Decisions. Jamie started his career at a Silicon Valley start-up and has had experience of achieving success for small and large teams and companies.

Karthik Dasari, shareholder and Director of MetaBroadcast said: "I am delighted to welcome Jamie Mackinlay to the team. He combines 25 years in the media industry with world-class capabilities in go-to-market strategy, sales effectiveness, and brand awareness making Jamie the ideal person to drive MetaBroadcast forward with our 3-5 year growth strategy."

MetaBroadcast is a specialist data company that offers automated and enriched metadata that powers content discovery and insights. We have a reputation for ensuring reliable data integrity, helping to earn long-term customer loyalty as a trusted provider to leading broadcasters, streaming service providers and a diverse range of media organisations. Founded in 2007, MetaBroadcast is headquartered in London, UK; the company has ingested metadata from over 50 different sources; serves 70+ broadcasters and 310+ channels, and manages over 65 million content records and billions of transactions.

## neXat Appoints Alexander Oudendijk as President

**Brussels, Belgium, July 19, 2022--**Former SES ASTRA CCO **Alexander Oudendijk** has been named the new President of **neXat**, the world's first satellite capacity aggregation platform. Oudendijk brings more than 30 years' experience in the satellite industry, including more than eight years as Chief Commercial Officer at SES ASTRA. Prior to that Oudendijk was Managing Director at Hughes Network Systems Europe.

"neXat is a unique, exciting and forward-thinking company that is carving out its space in the satellite industry", said Oudendijk. "I'm very excited to be closely working with this team of talented and dedicated professionals at such an innovative time for the company. By offering its disruptive model and making the industry take notice, neXat has the potential to change the satellite landscape,"he added.

Alexander Oudendijk

Oudendijk will replace Serge Van Herck who has served as president of the board for three years.

"We are incredibly pleased to announce the joining of Alexander and can't wait to integrate his ideas, experience and expertise into the business", said neXat CEO Thierry Eltges. "As one titan of the satellite industry joins, we say thank you and good luck to another with the departure of Serge. Serge has been instrumental to the significant progress and developments that the neXat brand has achieved and experienced over the past few years."

Since joining neXat in August 2019, Serge helped steer the company from its primary identity as an IP connectivity provider to a disruptive, booking.com-style capacity aggregator helming the 'Network of satellite networks'.

"My time as President of the Board at neXat has been a real privilege for me, and I'm proud to have contributed to some significant changes and progressive milestones as the company solidified its position in the market" said Van Herck. "I wish the company all the best as it continues to develop in its trademark innovative manner, and give my best wishes to Alexander as he steps into the role."

## Terran Orbital Appoints Jonathan Siegmann as SVP Of Corporate Dev.

**Boca Raton, Fla., July 11, 2022--Terran Orbital Corporation** (NYSE: LLAP), announced the appointment of **Jonathan Siegmann** as Senior Vice President of Corporate Development. Mr. Siegmann will lead Terran Orbital's investor relations, M&A, and venture efforts among other development

initiatives.

Marc Bell, Terran Orbital's Co-Founder, Chairman, and Chief Executive Officer commented, "I am pleased to welcome Jon to the Terran Orbital team. He brings significant investor expertise from his distinguished career at Fidelity leading the Aerospace and Defense sector coverage. Jon will play a critical role as we execute our investing and capital market strategy. We are excited to have Jon join the team and are looking forward to his contributions as Terran Orbital continues to grow."

Jonathan Siegmann

Most recently, MSiegmann served as Research Analyst and Portfolio Manager for Fidelity Management and Research Company. Coverage responsibilities included all North American aerospace, defense, and new space companies both public and private. Prior to Fidelity, Jonathan held various positions of increasing responsibility at BASF Corporation from 1998-2007. Mr. Siegmann received a BS from Rensselaer Polytechnic Institute and an MBA from New York University's Stern School of Business and is a Chartered Financial Analyst® holder from the CFA Institute.

Siegmann will report to Terran Orbital Co-Founder, Chairman, and Chief Executive Officer Marc Bell.

## SSPI-WISE Welcomes 6 New and 13 Returning Officers in 2022

**New York City, August 3, 2022--SSPI-WISE** (SSPI Women in Space Engagement) announced the results of its election, which took place over the final week of June. The membership of SSPI-WISE has appointed the following six new women to officer positions:

**Sílvia Borges**, Program Manager, SpaceBridge Inc., SSPI-WISE Mentoring Working Group Co-Chair;

**Andrea Maleter**, retired, SSPI-WISE Mentoring Working Group Co-Chair;

**Melissa Orlick**, Sales & Business Development Manager, Intellian Technologies, SSPI-WISE Sustainment & Infrastructure Working Group Co-Chair;

**Toni Lee Rudnicki**, Founder, TLR Consulting LLC, SSPI-WISE Networking Working Group Co-Chair

**Saharnaz Safari,** COO and Founder, SpaceRyde, SSPI-WISE Networking Working Group Co-Chair

**Manal Tadros**, Boeing Satellite Systems Insurance Office Manager, The Boeing Company SSPI-WISE Networking Working Group Co-Chair

**Elisabeth Tweedie**, Owner, Definitive Direction, SSPI-WISE Social Media Working Group Co-Chair.

Continuing to serve as SSPI-WISE officers for a second year are:

**Debra Facktor,** Head of U.S. Space Systems, AIRBUS U.S. Space and Defense, Inc., SSPI-WISE Chair

**Jomya Lei,** Satellite Designer, ViaSat, SSPI-WISE Vice-Chai;r

**Alix (Hornig) Wright**, SVP-Marketing Communications, Speedcast, SSPI-WISE Secretary;**Negar Feher,** Vice President of Business Development, MOMENTUS Space, SSPI-WISE Elevating Women Working Group Co-Chair

**Kaitlyn O'Hara,** Vice President & Associate General Counsel, Echostar, SSPI-WISE Elevating Women Working Group Co-Chair;

**Susan Saadat**, Senior Vice President, Americas, EtL Systems, SSPI-WISE Elevating Women Working Group Co-Chair;

**Wendy (Lewis) Newman,** Vice President, Marketing & Communications, SpaceLink, SSPI-WISE Mentoring Working Group Co-Chair;

**Kerstin Roost,** Global Account Director, ST Engineering iDirect, SSPI-WISE Networking Working Group Chair Emeritus;

**Vinitha Lalvani,** Marketing Coordinator, AvL Technologies, SSPI-WISE Social Media Working Group Co-Chair;

**Rosario Toxqui,** Director Marketing, Comtech Satellite Network Technologies., SSPI-WISE Social Media Working Group Co-Chair;

**Justyna Kosianka**, Senior Scientist/Analytics Team Manager, Ursa Space Systems, SSPI-WISE STEM Outreach Working Group Co-Chair;

**Natalia Larrea Brito,** Principal Advisor, Euroconsult, SSPI-WISE STEM Outreach Working Group Co-Chair;

**Audrey Puderbaugh,** Principal Engineer, Space and Ground Systems, Iridium, SSPI-WISE STEM Outreach Working Group Co-Chair;

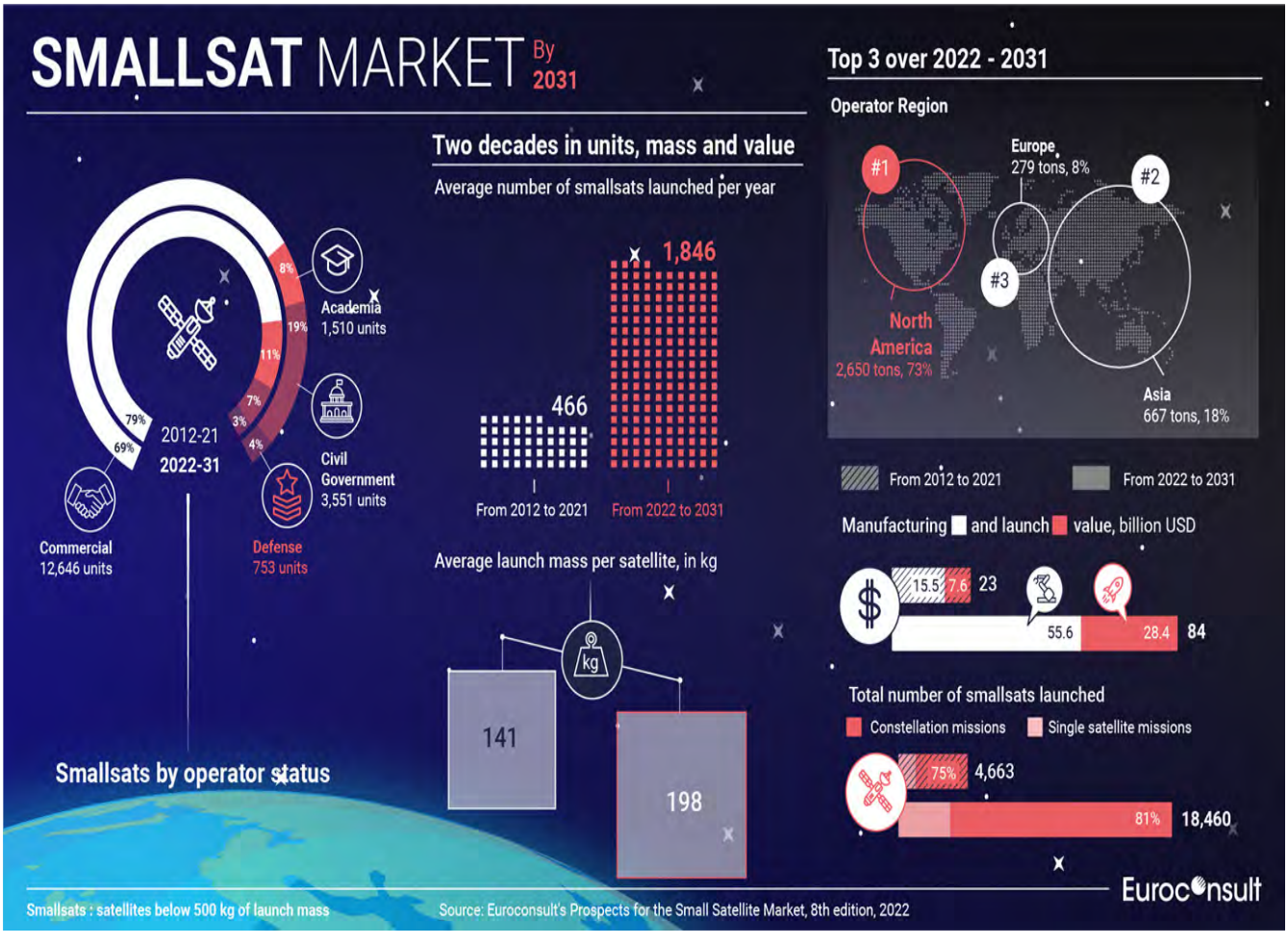
**Jennifer Hoil**, Director of Product Marketing, ST Engineering iDirect, SSPI-WISE Sustainment & Infrastructure Working Group Co-Chair.

# Euroconsult Predicts One Ton of Smallsats to be Launched per day on Average Over the Next Decade

**Paris, France, July 14, 2022**--The latest update of "Prospects for the Small Satellite Market" was released by Euroconsult, forecasting further growth in the global supply and demand of government, commercial and academic satellites weighing up to 500 kg. The market intelligence report, now in its 8th edition, anticipates that about 18,500 smallsats will be launched over 2022-2031, representing about 365 tons per year, i.e., one ton per day to be launched on average over the next ten years. However, the smallsat market presents a growing number of challenges such as high inflation, limited market addressability, difficult profitability, oversupply risk and concentration of the market by a handful of established players.

The main driver for continued growth at times of macro-economic uncertainty due to the war in Ukraine, the COVID pandemic, disrupted supply chains, high inflation and central bank monetary policy changes remains NGSO constellations, driven by LEO broadband and Earth observation and the continuous necessity for replenishment launches. Of all smallsats to be launched over 2022-2031, 81% are expected to be part of constellations.

Alexandre Najjar, Senior Consultant at Euroconsult



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stated, "While the war has had severe consequences on players that have part of their supply chains in Russia or Ukraine, it has demonstrated the value of smallsat applications, enabling commercial operators to showcase their capabilities and the merits of their constellations. Consequently, a growing number of government agencies are considering investing in their own smallsat systems or dedicating a budget to the procurement of commercial third-party smallsat-based services, supporting growth of the sector."


The smallsat manufacturing and launch market value will quadruple over the next decade, to $56 billion and $29 billion respectively, driven by the multiplication of constellation projects from both commercial and government stakeholders. Euroconsult has released its updated findings at a time of smallsat mega-factory multiplication in various nations across the world, initiated in the U.S. and China.

Flagship examples of low earth orbit (LEO) broadband constellations, such as SpaceX's Starlink and China's GuoWang, account for over half (53%) of the projected demand over 2022-2031 in units. Readers are therefore advised to go beyond raw numbers as vertical integration keeps growing with numerous players seeking to manufacture, operate and launch their own smallsats. Significant future market shares are now captive of a region, country or of an integrator and/or launch provider, challenging both commercial satellite integrators and launch providers which see more of their target customers not only leaving their addressable market, but also competing with their own services.

The updated report comes with an option to access premium features, including Euroconsult's Smallsat Constellation Database and its new Launcher Database – exclusive access to Euroconsult's databases for the first time in its history.

Najjar added, "However, growth in numbers, mass and value will not prevent high inflation and supply chain disruptions from impacting constellation materialization probability by inflating the capex and lead times of smallsat projects. We anticipate that stakeholders that have yet to raise significant amounts of capital will likely face a difficult situation, leading to smaller constellations, cancelled projects and scope reductions, as well as consolidation between players. Nonetheless, smallsats still represent a significant capability building opportunity for new entrants in the space sector, and the war in Ukraine has put the spotlight on the value proposition enabled by commercial satcom and Earth observation smallsat constellations, showcasing their merits around the world. A growing number of governments and commercial ventures alike ramp up their investments in small satellite systems and services, as well as manufacturing and launch capacities."

Other valuable updates to Prospects for the Small Satellite Market include a reviewed and refined pricing model for manufacturing and launch prices, most notably with regards to inflation-driven cost and price increases already witnessed in the manufacturing and launch industries and anticipated in coming years. The Euroconsult report incorporates new content to help give decision makers key knowledge in this area, as well as a reviewed and up-to-date forecast accounting for the economic situation and the ongoing impact of COVID-19.

You can discover more about the report and the table of contents by downloading the free extract of the report at: https://mailchi.mp/euroconsult-ec.com/smallsats

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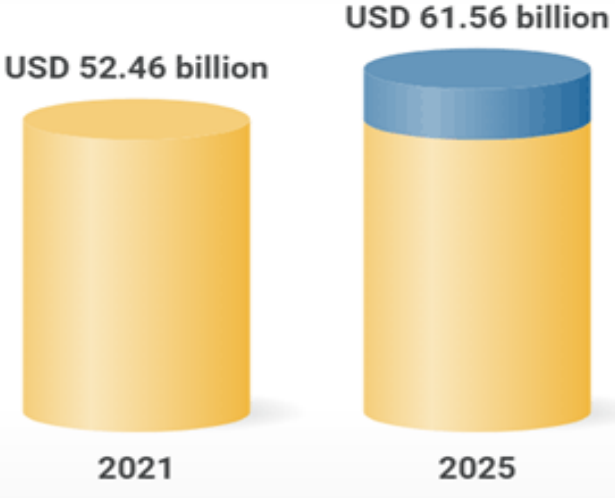


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