

Update on the Latin American Market

by Bernardo Schneiderman

The economic outlook for Latin America according to a report by the International Monetary Fund (IMF) describes the global recovery as continuing to struggle to gain its footing. Growth in Latin America and the Caribbean is expected to be negative for the second consecutive year in 2016. The regional recession masks the fact that most countries continue to grow, modestly but surely, with the contraction driven by developments in a few others. While the external environment has had a differentiated impact on the region with South America heavily affected by the decline in commodity prices and Mexico, Central America, and the Caribbean benefiting from the U.S. recovery and, in most cases, lower oil prices disparities in growth performance also reflect domestic factors.

Recent events in Latin America show how the global economic slowdown is affecting the market. From the point of view of key executives of the main satellite operators operating in the region, the recession in 2015 and the continuation of the unfavorable economic environment in 2016 do not affect the long-term plans of the operators or the revision of investment plans, but there is an im-

mediate concern with costs in dollar and the effects of the downturn on customers.

"This is an industry that does not work in short-term cycles and decisions are made with a very long term planning. We see a still strong demand especially in the video market and a lot still need to be defined," said Jurandir Pitsch, SES, during the Latin American Congress of Satellites, held in Rio de Janeiro, Brazil. Lincoln Oliveira, Embratel's Star One operator mentioned, another component that needs to be considered beyond the crisis is the entry of new competitors arriving with more aggressive pricing strategies, but he said the fact that Star One be linked to a large group size which operates in several areas helps give strength to business. "We are strong because of our customers and to have a great Telecom operator behind," he said (Star One is the satellite operating arm of Embratel, which in



Despite a downturn in the Latin American economies, Direct-to-Home (DTH) and other satellite services are growing at a modest pace.

turn is part of the America Movil-Mexican group).

Mauro Wajnberg of Telesat Brasil said that Brazil is still at a very poor overall stage in telecom infrastructure and this helps to give stability to the business in the satellite sector. "In recent years, we have experienced a very rapid cycle of expansion, but the infrastructure is still insufficient," he said.

Some satellite operators, however, emphasize

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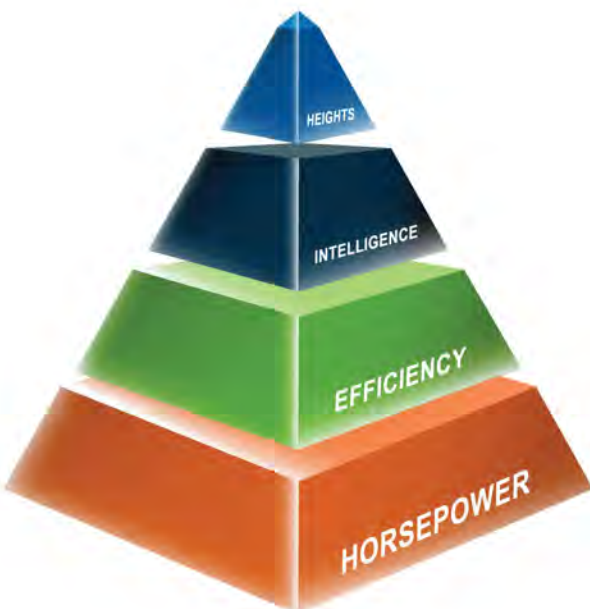


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Our 10th Anniversary



For Satellite Markets and Research, the Los Angeles, California-based publishing firm that brings you this magazine, among other products, 2017 represents a significant milestone. It will be our tenth year anniversary.

We've come a long way since those dark days in the second half of 2007, when the global financial crisis started. The satellite industry has grown almost three-fold in that time as evidenced by the Satellite Markets Index (page 29) which has been tracking a composite of satellite companies.

We are proud to have grown during one of the most exciting times in the industry. We owe it all to our loyal sponsors, readers and other supporters with whom we would never have reached this important milestone without their support and patronage.

To commemorate this important event, we will be holding a reception at the Wynn Hotel in Las Vegas during the NAB Show in April. Mark your calendars for the evening of April 25th. In addition to our 10th anniversary, we will also be hosting at the same event the 5th Annual Vision Awards where we have been honoring the Visionary Executive of the Year, Most Promising Company of the Year and Innovative Product of the Year. If you haven't submitted nominations to the awards, go to www.satellitemarkets.com/visionawards

We look forward to seeing you at the NAB and other shows in 2017.

Virgil Labrador, Editor-in-Chief



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Calendar of Events

Satellite Markets and Research will be participating in various capacities as exhibitors, conference panelists at the following trade shows in the first half of 2017:

March 6-9, 2017, Walter E. Washington Convention Center, Washington, D.C. **SATELLITE 2017.** <http://2017.satshow.com/>

March 21-23, 2017, Dubai World Trade Center, Dubai, UAE, **CABSAT 2017.** www.cabsat.com

Conferences: April 22 - 27, 2017, Exhibits: April 24 - 27, 2017, Las Vegas Convention Center, Las Vegas, Nevada. **NAB show 2017.** www.nabshow.com

May 22, 2017, **CASBAA Satellite Industry Summit**, Singapore.
www.casbaa.com

May 23-25, 2017, Marina Bay Sands, Singapore, **CommunicAsia 2017.**
www.communicasia.com

The Latin American Market...From page 1

the importance of a new commercial and strategic approach, working with new business proposals and new services. For Márcio Brazil of Intelsat, the time for the industry is good despite the crisis, but he points out that the new technologies of high-capacity satellite (HTS) and broadcast spot beams also changed the way of providing the service. "With the change in traffic volume, we have to think about more performance, more flexibility and accessibility," he said.

Rodrigo Campos, Eutelsat, the big step that is being given by the satellite companies today is toward more flexible models of service delivery. It also highlights the opportunity that the economic downturn brings that seek a more adequate planning of companies.

Sergio Chaves of Hispamar, the Latin American subsidiary of Spain-based Hispasat, underscores the fact that operators now have a large presence in Latin America, and that the performance of markets are different and end up paying off. "When we started, 90% of our revenues were in Europe, and today 70% of them are in Latin America," he said, referring to the numbers of Hispasat, parent of Hispamar. According to him, the crisis has a delayed impact on satellite companies because of long-term contracts.

Chaves emphasizes the importance of satellites in the development of public policies. "Today we see several Latin American countries using satellites to public policy for TV and broadband in underserved areas. The satellite's social role is very important.

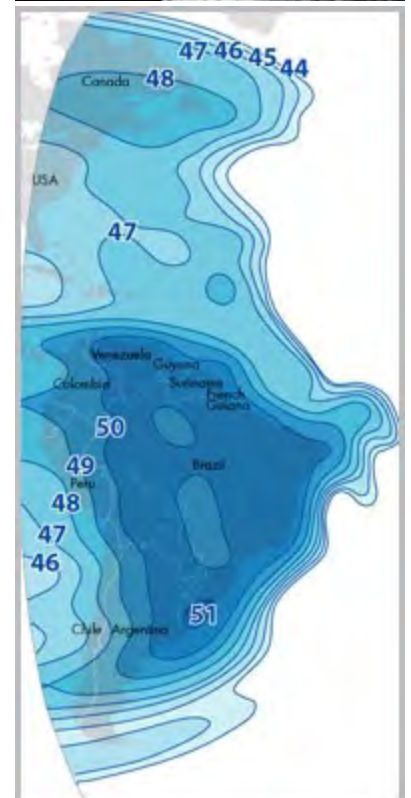
Elena Pisonero, President of Hispasat, said that the satellite operator is now more American than European during the Latin American Congress of Satellites. "The economic situation in Brazil is not good, but we have been here in Europe and we know that the crisis will pass. Brazil was and is a long-term bet, we are 15 years' operating in the country and the investment in satellite infrastructure is strategic," said Elena, noting that in the last auction of

Brazilian orbital positions Hispamar (joint venture of Hispasat and Oi) acquired two new exploration rights. In Elena's view, the Ka band is great expectation for the future. "We were the first to bring the Ka band for Latin America with the launch of Amazonas 3, we are building the Amazon 5 to launch in the first quarter of 2017 and we still have the Hispasat 1F, also with Ka band in Latin America". "We could say that the Amazon 5 is too large for Latin America (it has 34 spot beams in Ka band), but we believe that demand will be strong. For large countries like Brazil the satellite will always be relevant and it is important to set priorities in times of crisis. what we have seen is that many governments in the region, such as Mexico, Colombia and Chile, as well as Brazil, have placed digital inclusion as a basis for economic growth and social inclusion.

Jurandis Pitsch of SES mentioned "There is also intense competition from new entrants and won the ones that provide the more efficient technology, which avoids rise the cost for customers." But he believes that some operators can review the long-term plans that are being drawn now, and among the possible satellite sector customers, the DTH operator can be particularly affected in the long run.

On the future prospects of the satellite industry in the region, especially with the introduction of new technologies such as the constellations of Low Earth Orbit (LEO) satellites and Ka-band services, there is a mixture of excitement and skepticism among operators.

For SES, the model of medium earth orbit satellites (MEO) and LEO is promising, so much so that the company is one of the investors in O3b, which operates a constellation of MEO satellites. But for Jurandir Pitsch, the early experience of O3b shows that often the technology takes a little longer to get the parameters needed for a sustainable business plan than initially projected. "The O3b took seven years to get on the air. I think oneweb may be overes-



ABS 3A has 24 Ku-Band transponders covering the Americas. The satellite supports VSAT services, TV distribution, IP trunking, cellular backhaul and maritime services.

timating the ability to get to market on schedule, and a lot can happen there," said Pitsch. Lincoln Oliveira said: "Today the technology to launch tens and hundreds of satellites of these projects is the same as used for geostationary satellites. It is important that this technology moves too, but I think these projects can contribute to the



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evolution of the general industry."

DTH

With the availability of new HD channels in Europe and North America and expanding business in emerging markets, the operator SES satellites have registered an increase of 11.3% in the number of channels TV in 2015. There were 7,268 channels in total, with 2,900 only in emerging (Latin America, Asia Pacific, Middle East and Africa) an annual growth of 25%. Alone, the Latin American market contributed total of 780 channels, 190 of them in HD.

SES says the last three years, the number of channels in the satellite business has grown at an average rate of 9%. Considering only the channels in high definition, the increase was 15% in the same period. In a statement, the carrier said it expects further growth in HD channels and increase commercial offers in Ultra HD (4K), "in the coming years."

VSAT Market

One of the major developments in the Latin American satellite market concerns Hughes in Brazil. With more than 1.3 million broadband subscribers via satellite using the Ka band in the United States, Hughes launched the service for the residential market in Brazil in July 2016, when the satellite Eutelsat 65 West A was released into operation. Last April 2014 Hughes announced the purchase of all the Ka-band capacity in Eutelsat Satellite positioned at 65W dedicated to Brazil, covering about 4000 municipalities. "Our strategy in Brazil is very clear for the next ten years. The Ka band is a project that will happen, regardless of the dollar and the crisis. All Eutelsat capacity (the 65WA) for the next 15 years has been bought and paid by Hughes in Brazil and with this first satellite with

"...This is an industry that does not work in short-term cycles and decisions are made with a very long term planning. We see a still strong demand especially in the video market and a lot still need to be defined..."

-Jurandir Pitsch, SES



25 Gbps capacity," says the CEO of Hughes Brazil, Delio Morais.

But Hughes's plans for the Ka band in Brazil will go over after 2020. "For a second phase, Hughes already bought the payload in Ka-band satellite with other coverage in Brazil he could not reveal, but which will be released in 2018 and extend our coverage to 4,800 municipalities. And in 2019, 2020, which is when the fleet onweb goes into operation, we will cover full coverage in Brazil," said Morais. In addition to shareholder onweb, Hughes will market 50% of the operator's broadband capacity to Brazil, said the executive during the Latin American Congress of Satellites last October in Rio de Janeiro, Brazil. The executive said the broadband package for simpler Ka band will be a 10 Mbps connection with 20GB franchise in normal time and 40 GB on-peak hours, but did not disclose the price.

Inflight Connectivity

Another market segment that has promising potential in the region is inflight connectivity. The communications market loaded on aircraft promises strong growth in Brazil and Latin America, according to analysis by experts during the Latin American Satellite Congress last October. The expectation is that in Latin America this market represents

about US\$ 430 million with growth forecast, unlike developed markets like the US, where most of the market is taken. According to Anand Chari, CTO of Gogo, a leading provider of Inflight services in the world, the great revolution in this market is the evolution of antenna technologies and broadband satellite, which has enabled faster and cheaper connections. The Gogo can already offer today with the technology called 2Ku (one Ku-band dual antenna) 100 Mbps on board. One of the company's customers is GOL Brazilian Airlines, which launched the services last quarter of 2016. According to Chari, Gogo is working with the GOL Brazilian Airlines engineering to pass the certification and approval of Anatel (Brazil Telecom Regulatory equivalent of FCC) and ANAC (National Civil Aviation Agency). "The whole process of design and approval of the first aircraft takes about a year, but after the first the process accelerates," he explained. In addition to Gol, Azul, Latam and Avianca also prepared broadband releases and embedded telephony, according to satellite operators who have participated in the RFPs with system integrators.



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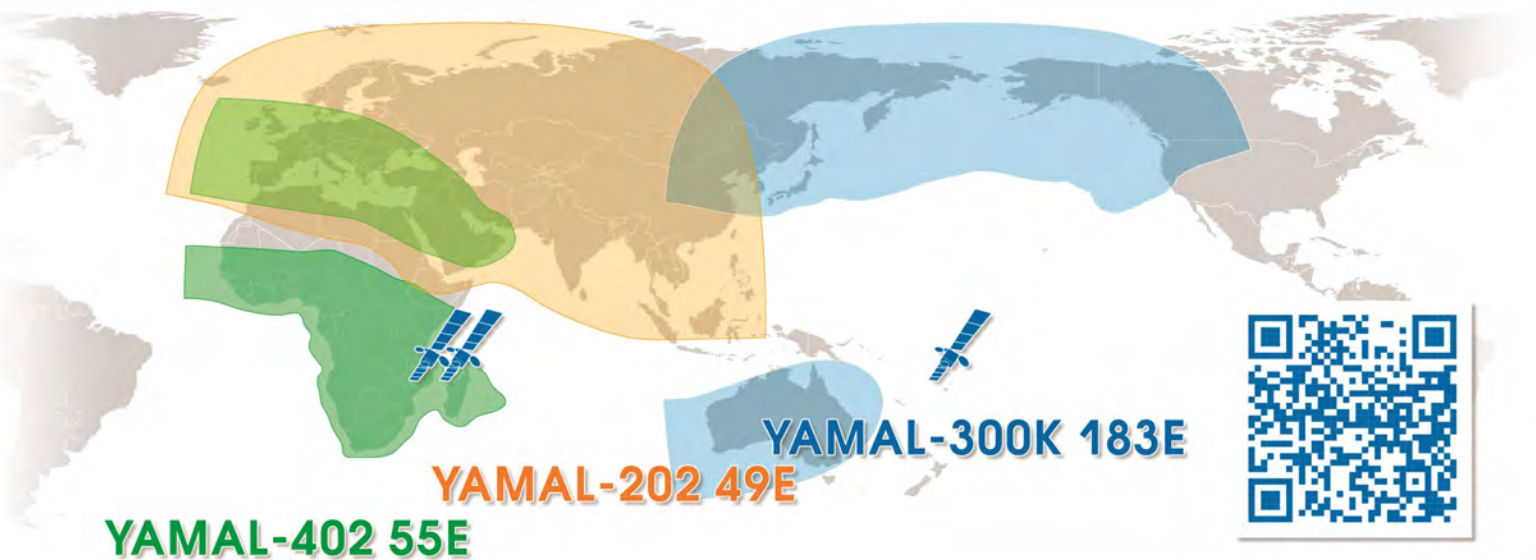
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Executive Roundtable on the Latin American Market

To get an overview of the current state of the Latin American satellite market, *Satellite Executive Briefing* invited executives of the major satellite operators active in Latin America to a virtual roundtable discussion on the current state of the market in the region. Those who participated include: **Erwin Mercado**, VP Sales, Latin America-ABS ; **Patricio Northland**, CEO-Eutelsat Americas; **Sergio Chaves**, Business Director for South America-Hispamar; **Carmen Gonzalez-Sanfeliu**, Regional Vice President, Latin America and Caribbean-Intelsat; **Gustavo Silbert**, President-Star One; **Jurandir Pitsch**, VP Market Development Latin America-SES; and **Mauro Wajnberg**, General Manager-Telesat Brasil.

How many satellites are you currently covering in Latin America and do you have any plans to bring more satellites to the region?

Erwin Mercado, ABS: Currently we have one operational satellite, ABS-3A at 3°W which offers C and Ku band in the region. The satellite brings 720 MHz of linear standard C band, and 216 MHz of standard linear Ku band.

Patricio Northland, Eutelsat: Eutelsat commercializes capacity on seven satellites for the Americas. The range we operate covers C, Ku and Ka frequency bands with high flexibility through options on coverage zones and power levels. This portfolio enables us to respond to varying customer requirements, including national broadband programs, Direct-to-Home TV and Internet services and video contribution from Latin America to North America or across the Atlantic to Europe or Africa. Once EUTELSAT 117 West B goes into service in Q1 2017 we will have eight satellites able to provide coverage of the Americas.

Sergio Chaves, Hispamar: We have now six satellites covering Latin America: Hispasat 1D, 1E, 1C, Amazonas 2,3 and 4. We are planning to bring three more satellites in 2017.

Carmen Gonzalez-Sanfeliu, Intelsat: Currently, we have the largest market share in the region, with more satellites serving Latin America than any operator and delivering services to all end user markets. Our media distribution networks have leading shares in both DTH and content distribution, and we have just added two satellites that serve the media sector. We also lead in broadband services and are currently deploying the region's first Epic^{NG} high-throughput (HTS) satellite, Intelsat 29e. Intelsat first start-

ed in Latin American with the Intelsat Epic^{NG} platform, Intelsat 29e is customized to serve the entire continent, with up to 10 times as the throughput as the asset it replaced. We also plan to launch two additional Intelsat Epic^{NG} satellites over Latin America, Intelsat 35e and Intelsat 37e in 2017 providing continuity and growth.

Jurandir Pitsch, SES: SES currently has 11 satellites authorized in Latin America, with operations in C and Ku bands. We have two satellites under construction at this moment that will cover the region. SES-10, to be launched in the last quarter of 2016, is a Ku band satellite with all beams covering Latin America. It will occupy the 67 West orbital location. The other satellite is SES-14, to occupy the 47.5 West position, which has C, Ku and Ka-band. In Ku this is an HTS satellite.

Gustavo Silbert, Star One: Star One has 8 satellites covering Brazil and all Latin America. These satellites have about 230 transponders in C and Ku band. Next year, Star One's main goals are to launch successfully the Star One D1 that will be the largest satellite so far built by Star One; start to use this new Ka-Band capacity in D1 as soon as and as much as efficiently as possible; and increase Star One presence in the Region confirming more and more to be the largest Regional Satellite Operator in Latin America.

Mauro Wajnberg, Telesat Brasil: Telesat currently operates five satellites serving Latin America: Estrela do Sul 2 (also known as T14R), Telstar 12VANTAGE, Anik G1, Anik F1, Telstar 11N. For the Olympics, Telesat anticipates having C and Ku band available from our recent launched satellite Telstar 12 VANTAGE and from Anik G1.

Considering the current market environment how many satellites are you planning to keep in the region for the next five years and do you have any plans to reallocate some of your current capacity?

ABS: Same as I previously mentioned with the addition that we are in process of designing the next satellite for a new orbital slot that will cover the region.

Eutelsat: We currently have no plans to relocate capacity.

Hispamar: We are bringing three new satellites for the Latin America region and the overall we are planning to have nine satellites in Latin America.

Intelsat: Given growing demand and projected subscriber growth rates in sectors such as corporate enterprise, wireless and mobility services, many fixed and mobile network operators are looking to upgrade their network capabilities and extend their reach to the more remote regions of the continent. According to Euroconsult, HTS demand from wireless networks and enterprise networks is forecasted to grow at a 73 percent CAGR and 62 percent CAGR, respectively, through 2020. At the same time, demand for traditional transponder services will continue to see single-digit growth rates for broadband connectivity as well as media contribution and broadcasting. We believe our current coverage and the launch of our Intelsat Epic^{NG} satellites will provide the capabilities to satisfy the end user demand today and provide a flexible, scalable infrastructure for our customers that will help meet demand in the future. At the same time, our satellite fleet and Globalized Network give Intelsat the flexibility to bring additional resources to bear in Latin America if needed.

SES: As I described earlier, we are planning two new satellites, but they will replace existing satellites over the region, augmenting the capacity. SES-10 will replace AMC-3 and AMC-4 (currently occupying the 67 West). The SES-14 will replace NSS-806.

Star One: Star One D1 is planned to be launched by the end of 2016. Part of its capacity will be eligible to be switched to outside Brazil but this will depend of the demand we have been assessing.

Telesat: In terms of new satellites, Telesat announced Telstar 19 VANTAGE. Telstar 19 VANTAGE is a state-of-the-art spacecraft, already under construction, that is scheduled to launch in the first half of 2018. It will have two high throughput satellite (HTS) payloads, one in Ku-band and the other in Ka-band and will be located at 63 degrees West,

making use of the two new exploitation rights granted by the Brazil's Agência Nacional de Telecomunicações (Anatel) as a result of Telesat Brasil's winning bids at Anatel's May 2015 auction

Do you plan to launch High Throughput Satellites (HTS) in Ku or Ka-Band for the Latin America market?

ABS: Yes, the design is in process. Cannot divulge more information at this time.

Eutelsat: Eutelsat has been a pioneer in Ka-band since the launch of KA-SAT in 2010. We are targeting other growing regions with these payloads and launched EUTELSAT 65 West A in March which is equipped with a High Throughput payload of Latin America to bring broadband connectivity to the most important markets of the region. This payload has generated a lot of interest and was fully booked prior to launch to Hughes do Brasil and Stargroup. Hughes has announced they will be launching their commercial broadband service for consumers and enterprises in August this year.

Hispamar: We are planning to launch the satellite Amazonas 5 Satellite in 2017 that will be a HTS satellite with Ka-band beams focus in Mexico, Colombia, Peru and Brazil.

Intelsat: As mentioned previously, Intelsat 29e, along with the scheduled launches of Intelsat 35e and Intelsat 37e, will provide HTS services for our Latin America customers across all sectors. Since Intelsat 29e entered service, they are already seeing the benefits it is yielding. For example, Skynet de Colombia is providing broadband and internet connectivity to approximately 600 remote sites, including schools and communities, across 250 municipalities in Colombia under a government partnership. Earlier this year, we also received a significant commitment from a global provider of broadband services that focuses on markets including the energy, government and cruise industries. Intelsat will provide a global solution that includes services on 20 of our satellites, with the majority of the services to be provided by the Intelsat Epic^{NG} fleet. This will serve customers in the Caribbean and in the waters around Latin America.

Intelsat Epic^{NG} makes these networks possible because it provides the necessary power, cost savings and simplified access to deliver broadband connectivity anywhere; more throughput across the network due to its efficiency and the backwards compatibility to use its existing hardware even as they access higher capabilities.

SES: Yes, SES-14 is an HTS satellite to be launched in 2017

(to be operational Q1 2018). This is a Ku band HTS (users beam), with Ka band Gateways. The satellite will cover 100% of Latin America.

Star One: Star One D1 has a payload in Ka that can be considered as HTS (around 18 Gbps). We see the use of this new Band in the Region as a very positive movement. The current use of Ka band has been limited in quantity but will increase very fast with the new capacities that are planned to be deployed between now and by the end of 2017. This includes our Star One D1 satellite that will provide Ka band services over Brazil. Our current model is to use Ka-Band mainly for cellular backhaul and some video. The use for consumer broadband is still under evaluation.

Telesat: Telstar 19 VANTAGE already under construction, is HTS satellite that is scheduled to launch in the first half of 2018. It will have two high throughput satellite (HTS) payloads, one in Ku-band and the other in Ka-band.

Anything else you would like to add?

ABS: ABS put in operation in the region the first all electrical propulsion satellite in 2015 (ABS-3A).

Eutelsat: Video is continuing to grow in Latin America and most of that growth is fueled by DTH, which means there is a big opportunity for satellite operators. Anticipating this trend, Eutelsat just launched EUTELSAT 117 West B in June, which is equipped with 48 Ku-band transponders and will provide exceptional coverage across four key markets in Latin America (Mexico, Central America and the Caribbean, South America and the Southern Cone). This satellite will be co-located with EUTELSAT 117 West A, which will further strengthen our video neighborhood at 117°W and will allow customers that include Millicom and Stargroup to continue to expand their networks.

Hispar: The Amazon 5 which will be located in the 61, will be built by SSL. With this new satellite, HISPASAT Group responds to the growing demand for satellite capacity, mainly for satellite television platforms, which features Latin America and Brazil. Also, it has Ka band capacity to meet the new connectivity will internet services.

The Amazon 5 has an expected lifetime of 15 years and will be built on the satellite platform 1300 SSL. It will have a power of 11.5 kW and a multi-mission payload distributed in 24 transponders in Ku band, which provide service in two areas of coverage: Brazil, Rest of Latin American countries. It will have 34 Ka band spots spread throughout the continent of Latin America.



Artist rendition of the Telstar 19 VANTAGE Satellite to be launched by Telesat for the Latin American market in 2018.

Intelsat: If done correctly, HTS delivers major breakthroughs in the areas of performance, economics and access that will have an impact for our customers across multiple sectors and for the entire population of Latin America. We are seeing robust demand already, but we realize it is not just about building high-throughput, high-performance satellites. This is why we've undertaken parallel efforts to drive innovations that will make it easier to integrate our satellite solutions into networks and tap into the power that HTS delivers, such as our work with Kymeta and Phasor to develop antenna technology that will be optimized for use with Intelsat Epic^{NG}. By making access to HTS simpler and more cost-effective, our customers will benefit from the combined advantages of satellite and terrestrial technologies, delivering more value and better service to end users.

Star One: Star One has now a considerable capacity over Brasil and Latin America but so far with most of this capacity used by Brazilian customers. With Star One D1, we expect to have the ability to increase our share of capacity lease outside of Brazil.

Telesat: The 63W slot has become a preferred orbital location among leading satellite service providers and broadcasters who rely on Telesat's Estrela do Sul 2 to support tens of thousands of sites across Brazil and South America. Now, Telesat is ready to further expand at 63 degrees W with the new Telstar 19 VANTAGE satellite, which will be co-located with Estrela do Sul 2.





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Newtec and Panasonic Avionics Ink Partnership

Ten years ago, Newtec was a small Belgian company that many people hadn't heard of. Under the leadership of Serge Van Herck, the company has become a significant player in satellite technology counting members of the European Broadcasting Union (EBU) and Arab States Broadcasting Union (ASBU), CBS, AlJazeera, SES, Intelsat, Eutelsat and Cisco amongst its clients. A strong focus on Research and Development has led to a string of awards in the last few years, including "Best Ground Segment Technology" from VSAT Global, "Best Cable or Satellite IP Technology" from CSI Magazine, "Teleport Technology of the Year" from the World Teleport Association and "Most Innovative Product of the Year", from this magazine. Today, according to the company, more than three billion people watch television courtesy of Newtec equipment. Its latest deal with Panasonic Global Communications further propels this small Belgium company onto the world stage.

Latest figures from Euroconsult show that there are 26,000 commercial passenger aircraft, 27,500 other commercial aircraft and 33,400 business aircraft. Currently, although over half of the business aircraft have inflight connectivity, only 5,300 of the commercial aircraft do, of which 2,900 are connected via satellite. By 2025 Euroconsult is projecting that there will be 23,100 connected commercial aircraft, and 34,000 connected business aircraft. 75% of these will be connected by sat-

ellite. Obviously, this is a growing market, and one that is attracting a lot of attention as service providers compete to increase their stake in this arena.

Panasonic Avionics currently has a 19% share of this market, but with the recent announcement of Panasonic Global Communications' (a Division of Panasonic Avionics Corporation) collaboration with Newtec, it is hoping to significantly increase its share. The two companies have worked together to develop a new high-speed modem,

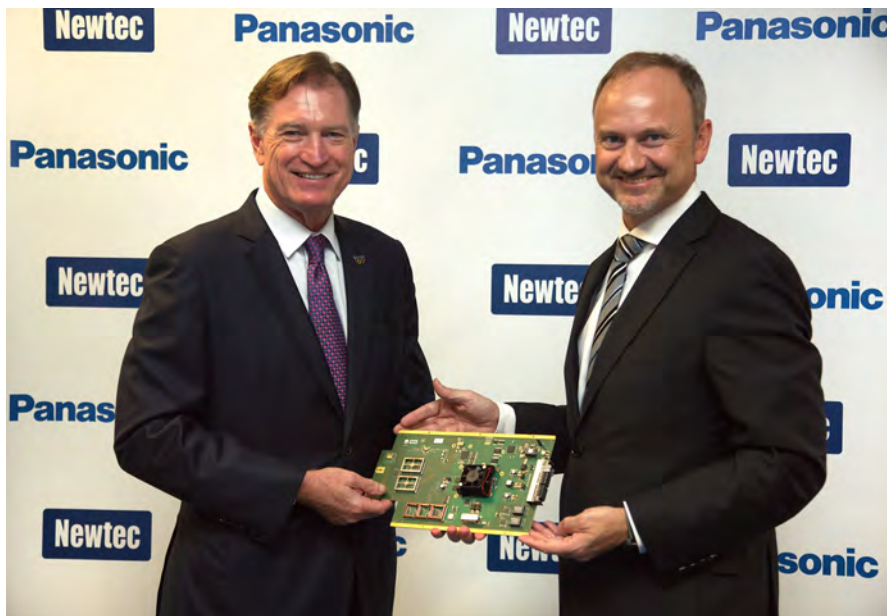
achieve that vision."

The new modem is designed for multiple mobility markets including maritime, but as David Bruner, said: "the aero market presented the greatest challenge, with planes moving at over 1,000 Km per hour.....users want more bandwidth, they want it delivered more efficiently at lower cost..... these are engineering challenges; we embrace these and Newtec has been a great partner."

This sentiment was echoed by Paul

Margis the President and CEO of Panasonic Avionics, who described the experience of working together with Newtec for the last few months as "amazing."

The modem is capable of exceeding 400Mbps and includes three demodulators for seamless (make before break) beam switching and simultaneous data and video reception. It is



Paul Margis, CEO of Panasonic Avionics (left) and Serge van Herck of Newtec (right) holding the high-speed modem Newtec has developed for Panasonic's Global Communications Network.

which will give users 20 times the bandwidth of Panasonic's current offering and will also be significantly higher than most of the other offerings. In looking for a partner to develop the modem, David Bruner, VP Global Communications Services, Panasonic Avionics said there were two criteria to be fulfilled. Firstly, the company had to be "best in class in terms of performance of the modem" and secondly "a cooperative organization, that could embrace our vision of where we want to go in the marketplace and help us

not backwards compatible, but it is size compatible, and replacing the current equipment on-board planes is simply a matter of swapping out a board. The board includes a Field Programmable Gated Array (FPGA) that will enable future software upgrades so eliminating the need to physically "touch" a plane to apply software updates. And even though this partnership has only been in place since April, according to Frederik Simoens, Newtec CTO, "this (new modem) is only the beginning of innovation and the Research and De-

velopment teams are now working on new ground segment technology.”

Newtec Dialog hubs will also be installed on the ground, replacing Panasonic’s existing hubs. Dialog combines the efficiency of SCPC with the dynamic bandwidth allocation of Mx-DMA. According to Frederik Simoens, using DVB-S2X on the forward link will provide an efficiency gain of 50% over existing solutions, and utilizing Mx-DMA on the return link will provide an improvement of up to 100%. The modem also incorporates Very Low Signal to Noise Ratio Modulation and Coding (VL-SNR MODCODS), to optimize it for HTS, maximizing efficiency and availability.

The modem is currently going through FAA certification, and the first installations are planned for 2017 with a “friendly” aviation customer of Panasonic’s. Demand for the new modem is reported to be high and a “significant” number of Panasonic customers’ have already signed up for it.

At the same time Panasonic is increasing its global satellite capacity from 2,300MHz to 15,000MHz, so further increasing its ability to serve a larger market.

Serge van Herck, CEO Newtec, speaking on behalf of the board, emphasized that “this is the beginning of a long-term partnership that will shape the future of satellite communications.....the relationship between the teams will grow. We will be further developing new technologies, to increase the speed and further improve the efficiency of the links to planes and ships all over the world.”

New developments are coming under new leadership. Shortly after the announcement of the deal with Panasonic, it was also announced, that after ten years of successfully building Newtec, into a market-driven, product leading company, Serge would be resigning as CEO at the end of 2016. He leaves on a high note. As well as cementing



A Newtec engineer showing one of the circuit boards of their new high-speed modem for mobility applications.

the deal with Panasonic; Newtec achieved 26% increase in revenue last year. Thomas Van Den Driessche, the former Chief Commercial Officer, (CCO) who has been heavily involved with the Panasonic deal, and continues to work closely with them, was appointed CEO, effective January 1st. This will be a smooth transition. Thomas has worked closely with Serge for the last nine years, and as CCO defined the strategy that led to that 26% growth. He was also instrumental in the development of Dialog, and is one of the

leading voices in the industry pushing S2X. Newtec, is in good hands.

This Belgium-based company, is going places.



Elisabeth Tweedie is the Associate Editor of the *Satellite Executive Briefing*. She has over 20 years experience at the cutting edge of new communication and entertainment technologies. She is the founder and President of Definitive Direction a consultancy that focuses on researching and evaluating the long term potential for new ventures, initiating their development and identifying and developing appropriate alliances. During her 10 years at Hughes Electronics she worked on every acquisition and new business that the company considered during her time there. www.definitivedirection.com She can be reached at: elisabeth@satellitemarkets.com

You Own this Court

by Lou Zacharilla

There are things in life bigger than Donald Trump's elevation by his people to (in his view no doubt) an undervalued chunk of real estate at the end of Pennsylvania Avenue, once modestly referred to as the "Peoples' House." Huger even than the departure of the common British people from the continent of Europe, and many say from their common sense. There really are.

Four of those **other** things, mercifully, were on display during a splendid, chilled winter's night on 5 December inside London's eminent Whitehall Place, during the second annual Better Satellite World Awards dinner, produced by SSPI and its UK Chapter, with the support of Milbank.

One of them, which in my view uniquely defines the goodness and horror of our species, will be remembered as one of satellite's finest hours in 2016 for decades to come. It happened in May 2015, far from the egos and anger of two of the most pampered nations ever bestowed on human society. In that month, in the waters of the South Pacific, former slave fisherman Myint Naing, 40, was reunited with his family after 22 years. Mr. Naing was among hundreds of former slave fishermen who returned to Myanmar following an Associated Press (AP) investigation into the use of forced labor in Southeast Asia's seafood industry.

The persistent, meticulous, and sophisticated investigation by AP, led by Pulitzer Prize winning-journalist Martha Mendoza, traced the slave-produced seafood from Asia to major U.S. supermarkets, restaurants, and food suppliers. Amidst this display of why a free press is a sacred thing, there was one primary piece of evidence that was central to the reporting, and the result, which freed 2,000 slaves. That key piece of evidence from Mendoza's reporting was a stunning image captured by DigitalGlobe's WorldView-3 satellite of a slave boat transferring its catch to a commercial fishing vessel in the middle of the ocean. An escaped slave corroborated that the boat was in fact the one on which he had been forced to work. Governments in the region soon took notice of the image – a picture being worth 2,000 human lives in this case – and justice began an unusually swift role from there.

This past Spring the project earned the 170-year-old news agency its first Pulitzer Prize for Public Service. Soon after the Obama Administration, now unaware of the irony of the case, helped pass legislation which closed the loophole that had allowed the slave-made food into the USA.

With Peter de Selding, the dean of our industry's remarkable fleet of journalists at my table that night and watching on, DigitalGlobe's Steve Allen accepted a Better Satellite World award from SSPI chairman and Globecomm CCO Bryan McGuirk.

The satellite industry took this prize as it takes many of the great accomplishments it enables: quietly and in a ven-

ue among peers, peers who, unlike much of society in these dizzyingly dysfunction times, know the difference between right and wrong.

I had the privilege of being the emcee at the event and naming Disaster Tech Labs, the Global VSAT Forum and Chicago-based startup Outer-net with their awards as well. Catherine Mealing-Jones, the UK Space Director of Growth, was given a Personality of the Award by SSPI's UK Chapter.

At the outset of the evening, the Honorable David Morris, the Chair of the UK Parliamentary Space Committee, spoke informally to a group of 150 of the role of

the space and satellite industry, its enormous growth potential in the UK and its positive impact on future British jobs. There was the sense that irrespective of how Brexit plays out, the industry and its work will continue. Hearing the DigitalGlobe story, and having had a chance to relay it on a public podium I, along with others, began to realize that in the best sense possible, satellite really is "above it all."



From left, the author, Lou Zacharilla and David Hartshorn, Secretary-general of the GVF with the awardees of the Better Satellite Awards 2016 held in London.



Lou Zacharilla is the Director of Development of the Society of Satellite Professionals International (SSPI). He can be reached at: LZacharilla@sspi.org

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Interbee: Providing Service to a Diverse Region

by Naoakira Kamiya

The 2016 International Broadcast Equipment Exhibition (InterBEE2016) was held at Makuhari Messe Convention Center located at Chiba City, near Tokyo, from 16 to 18 November. The event is regarded as Japan's most comprehensive broadcast equipment and ICT/Cross Media show for professionals and has been running successfully since 1965.

Undoubtedly the highlight of 52nd exhibition was live transmission of 4K Ultra HD HDR (High Dynamic Range) video by SKY Perfect JSAT. In addition NHK and Broadcasting Satellite System broadcasted live 8K Ultra HD sports event for the first time in the history of InterBEE.

SKY Perfect JSAT (SPJ) engaged visitors by demonstrating 4K Ultra HD HDR video transmission over JCSAT-3A satellite. This was end-to-end live transmission from SPJ's Tokyo Media Center (TMC)

to Makuhari Messe Convention Center. SPJ captured special 15-minute footage of music event at TMC studio for six times a day and delivered live to five designated viewing places of InterBEE2016.

This video featured Tokyo-based Jacob Koller Trio and Jazz singer Karen Aoki. TMC studio was cautiously set up with special lighting system to capture HDR images in Hybrid Log-Gamma (HLG) format. HLG has been developed by BBC R&D and NHK and standardized by Association of Radio Industries and Businesses in Japan.

According to SPJ, signal delivery over JCSAT-3A satellite was made in the format of 4:2:0 10bit 4K Ultra HD HDR at 60 frames per second. 35Mbps video feed was encoded by NEC's H.265/HEVC Main 10 contribution encoder in real time. The main display was set up at the entrance hall of InterBEE2016 and stunning 4K HDR images dazzled visitors. In addition Sony, Toshiba, FOR A, and Kyoshin Communications showcased such live video at their booth in their own manner. For example, Sony arranged comparison screens of

4K HDR video over the satellite and full HD SDR video over IPTV network.

Besides Jacob Koller and Aoki show, SPJ transmitted such stored 4K HDR content as beach volleyball, lifestyle, and drama produced by them. The most impressive content was super slow motion novelty shot of soap bubble blowing.

"4K Ultra HD HDR is the next evolutionary step. SKY Perfect TV is supporting the smooth transition from full HD to Ultra HD, and from Ultra HD to Ultra HD HDR," said Yutaka

Imai, SPJ's Chief Researcher of Multichannel Pay TV Business Group. He added "The most important point of this year's live transmission is the parallel feed in 4K Ultra HD HDR over JCSAT satellite and in 2K Full HD SDR over NTT Plala's IPTV network."

NHK collaborated with Broadcasting Satellite System (B-SAT) to demonstrate live 8K Ultra HD video transmission over BSAT-3b satellite. This was end-to-end live transmission of Grand Sumo Tournament held at Fukuoka Kokusai



Center in Kyushu Island to Makuhari Messe. NEC provided 8K MPEG-H HEVC MMT contribution CODEC designated VC-8350 and VD-8350. Sharp supplied the world first 8K video receiver and 85 inch 8K display.

Besides the above-mentioned 8K display at the entrance hall of the convention center, 13K x 5K multi-display (consisting of 16 of Sharp full HD display) was set up at AZLAB booth and live Grand Sumo Tournament on such large display really captivated visitors. "16 APSK 100Mbps video feed is sent to Ku-band transponder of BSAT-3b based on ISDB-S3 specification and received at 1.2 meter antenna on the roof of the convention center. The video format is in 4:2:0 10bit at 60 frames per second" explained NHK engineer at AZLAB booth.

In addition to Grand Sumo Tournament, NHK introduced the latest 8K documentary produced jointly with Louvre Museum. Art fans were wowed with immersive viewing experience and commented NHK established another technological milestone in 8K production.

Surely 4K8K Ultra HD and HDR are the next logical trend in TV evolution and the above-mentioned stunning demonstrations proved the satellite delivery system can accommodate such next generation signals.

Setting aside satellite delivered live demonstration, there were more than 30 eye-catching booths from leading broadcasting equipment manufacturers in Japan such as Sony, Panasonic, Canon, FOR.A, Astrodesign, Toshiba, Ikegami, Hitachi among others at the show.

Sony unveiled 4K slow motion camera system HDC4800/BPU-4800, HDR production converter HDRC-4000, 4K LED TV Z9D, 4K SXRD razer projector VPL-GTZ270/280, and other latest products around its core capabilities in image technologies.

Panasonic showcased 4K memory card camera recorder AG-UX180 under the banner of "For Professional 4K Shooting." The company also exhibited 4K switcher AV-HS8300, 8K P2 recorder AJ-ZS0500, and other professional 4K8K workflow equipment.

Canon offered to visitors the latest CINEMA EOS C700 camera, 24 inch 4K reference display DP-V2420, and 4K power projector 600STZ. Furthermore 8K camera and 30 inch 8K HDR display were exhibited for visitor's information.

Spearheading the demonstrations at the show floor was

FOR.A's FT-ONE-LS camera. With this 4K high frame rate camera you can shoot up to 500 fps image. According to the company it will be ready for sale from January 2017.

Astrodesign announced the world's first 55 inch 8K 120Hz LCD monitor designated as DM-3815. Another 8K related equipment at their booth was full specification 8K SSD recorder HR-7518.

In the satellite communication and broadcasting equipment sector, a number of leading players such as AT Communications Corp, Moubic Inc, NEC, and Toshiba showcased their latest products and services.

AT Communications unveiled two OB Vans this year. One truck was 4K SNG and another was Satellite-On-The-Move (SOTM).

4K SNG was equipped with CCT120DA antenna, NTT's 4K encoder HC11000E, Paradise Datacom's Q-Flex DVB-S2 satellite modem.

SOTM truck was equipped with a terminal made by General Dynamics SATCOM Technologies and LiveU Xtender so that it can maintain connectivity with both satellite and LTE/4G/3G networks while moving. "Such hybrid OB Van is required not only by broadcasters but also by government and municipal agencies in case of emergency" said Takeo Asano, Chairman.



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AT Communications also introduced very small flat Ku-band antenna made by SATCUBE in Sweden and the lightest Ka-band phased array antenna supplied by GETSAT in Israel.

Moubic represents such companies as Vislink, Newtech, and Ericson in Japan. At this year's InterBEE2016, they highlighted Mantis MSAT and UltraCoder made by Vislink. "The Vislink encoder is very small and light but it is capable of encoding Ultra HD 4K video. Since bandwidth required for 4K content is prohibitive, such cost-effective encoder is very important especially for producing live sport event" said Makoto Ozawa, CEO.

Moubic also demonstrated Newtec's DVB-S2X multi-carrier satellite gateway MCX7000 and Ericson's HEVC 4K/HD encoder AVP2000.

Japan Radio Company introduced two kinds of flat antenna. One antenna is intended for flyaway and SPJ is already using for their daily operation. Another high-end antenna is designed for SNG and will be sold from 2017.

Toshiba showed three kinds of their newest SSPAs, which were outdoor SSPA with 240W, 2U indoor SSPA with 240W, and the most powerful 3U indoor SSPA with 350W.

Since compression and bandwidth optimization technologies are key to make Ultra HD 4K8K successful, such well known encoder makers as NTT Electronics, NEC, Fujitsu

exhibited their latest CODEC. For example, NTT Electronics displayed its own one chip LSI 1RU encoder HC11000E optimized for 4K 60fps 4:2:2: 10bit. They also announced that first-ever 8K scalable HEVC encoder with in-house ASIC is now available for real time contribution.

The InterBEE2016 was organized by Japan Electronics and Information Technology Industries Association (JEITA) and a record number of 1,090 companies and organizations including 593 from 34 overseas countries and regions, exhibited at 1,926 booth spaces. At the end of the show JEITA proudly announced that they welcomed a record breaking 38,047 visitors this year.



Naoakira Kamiya is Managing Director, **Satellite System Research Institute** and Director of the **Japan Satellite Business Association** based in Tokyo, Japan. He is a frequent contributor to various satellite and broadcasting trade publications. He can be reached at: ZUM05241@nifty.ne.jp

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How Satellite Wins in an OTT World

by Roger Franklin, CEO, Crystal

Over-the-top channels and services are becoming mainstream, offering consumers everything from niche, specialized services to mainstream channels. For consumers, this means a wealth of choice, and, with low subscription rates, many are even signing up to multiple OTT services. For broadcasters, OTT represents a massive opportunity to deliver content in a different, and much more personalized and engaging way. And because consumers are signing up to multiple services, there is plenty of space for multiple providers.

While it is true that the satellite industry is having to adapt its own business models to remain relevant and compete in this ever-changing landscape, the benefits for satellite providers of launching OTT services are huge.

The Value of Satellite

The value of satellite in the distribution chain is undeniable, when you realize that much of the world's video already flows through its networks. There was a time when satellite was the only way of distributing video, therefore satellite operators already understand the demands of video, inside and out.

These days, satellite is of course one of many ways to distribute video, yet it remains one of the most reliable and efficient methods, which allows content providers to maintain their footing while learning how to make the most of these new platforms.

With the consumer appetite for a more personalized TV experience increasing, and the technology available to enable that, broadcasters have a unique opportunity to tailor content in ways that were simply not possible before. However, it does also present challenges, with a vastly different workflow needed.

A Very Different Workflow

The main challenge for satellite broadcasters looking to provide OTT content is that an OTT workflow is vastly different from a traditional satellite workflow. For satellite distribution, a linear TV channel is automatically created from the media content, with appropriate overlay graphics and advertisements inserted in all the right places. This will then be compressed to around 8- 10 MB and sent over satellite, ready for distribution to homes.

This is very different than for OTT, where the continuous TV signal has to be broken up into a set of files that can then be transmitted over the Internet. The main challenge with that is knowing where to draw the line to mark the start and end of a fragment. Unless you tell the device where to start and end, you might have the end of a program and the beginning of an advertisement in the same chunk, which makes changing the ad content much more complex. It can also lead to a disjointed video experience for the consumer.

Another challenge is that sometimes broadcasters may not have the rights to distribute all content globally. This means having to potentially chop parts out for certain versions, replacing it with something else for regional compatibility.

Defining the Boundaries

These challenges can be overcome with good use of metadata, enabling you to define the boundaries of your content to ensure it is split in exactly the right place. Once you have overcome this, it means you can change advertisements depending on region, customer preferences, etc., or you can even swap media content out for other content. Metadata is absolutely crucial to enabling these new revenue models and targeted advertising, but more

than that, it can enable it to be done in a highly automated fashion, which is frame accurate, consistent, and reliable. This is an area where my company has been making significant investments over the past two years.

This approach also enables you to add value in other significant ways. For example, it can enable product placement or the re-purposing and reselling of content, such as pulling together highlights from a weekend's worth of football games. The more broadcasters understand about their consumers, the more that content can be personalized for each individual, based on viewing preferences and shopping habits, for example.

A Place for Satellite

Satellite remains an important part of the distribution chain in most cases, even for OTT services, particularly because of its reliable nature and ability to connect even the most rural of networks. It will also continue to be the only option in certain areas of the world where connectivity is lacking. More than that, satellite broadcasters have the opportunity to contribute and shape the future of TV, but it means embracing a new approach and coupling that with satellite provision. It is certainly an exciting time for the entire broadcast industry.



Roger Franklin is CEO of **Crystal**, a provider of network monitoring and management solutions. Crystal won the

"Most Promising Company" award in 2015 given by Satellite Markets and Research. He can be reached at: roger.franklin@crystalcc.com

From Arthur C. Clarke to 'AeroConnect' Mobility

by Martin Jarrold

It would be remiss of me not to begin this monthly column without referencing the elevated level of international recognition that has been given to GVF in the form of an award for its various achievements in working on behalf of its global satellite communications industry membership.

In a press statement released on 9th November the Board of Directors and Secretariat of the GVF expressed profound gratitude to the Arthur C. Clarke Foundation for honoring the organization with an **"International Achievement Award"**. The 2016 Sir Arthur Clarke Award was given in recognition of "effective and staunch support and promotion of the satellite industry". The award was presented to the GVF Secretary General, David Hartshorn, by Walda Roseman, Chair of the Arthur C. Clarke Foundation, during a gala dinner ceremony at the British Interplanetary Society's **Reinventing Space Conference** at the Royal Society, London, on 27th October.

Accepting the award, David Hartshorn, Secretary General of GVF, said "We are truly honored. Sir Arthur C. Clarke's vision served as the genesis of the satellite communications industry, enabling improvements in health, education and quality of life for people everywhere. So it is fitting that this award has drawn attention to our industry, as reflected by the companies counted among GVF's international membership. On behalf of the GVF Members, we thank the Arthur C. Clarke Foundation, and we recommit ourselves to helping bring vital communications to the furthest reaches of the world."

Among the GVF achievements recognized by the Foundation were the following:

Training & Certification – Nearly 13,000 individuals in every major region have been enrolled in more than 30 GVF courses developed by SatProf, the GVF's training content partner, and delivered by the membership to VSAT installers, teleport operators, and professionals in the maritime, humanitarian, broadcasting, disaster response, peace keeping, security, and other stakeholder groups.

Advocacy – Advocating global access to satellite spectrum resources and advocacy for sound regulatory policies has been enabled by GVF's Regulatory Working Group and Satellite Spectrum Initiative, which includes cooperation with governments, inter-governmental organizations, and allied associations including the Asia Pacific Satellite Communications Council, Cable and Satellite Broadcasting Association of Asia, EMEA Satellite Operators Association, Interference Reduction Group, Satellite Industry Association, Society of Satellite Professionals International and the World Teleport Association.

Promoting Solutions – GVF coordination with industries, governments and end users has resulted in a range of programs designed to improve and expand access to satellite-based solutions, including network integrity through the Cyber-Security Task Force, equipment quality through the MRA Working Group, disaster preparedness through the Disaster Preparedness Initiative, and more. GVF regularly convenes meetings, conferences, summits and workshops where stakeholders promote and enable the effective application of state-of-the-art satellite communications solutions.

In the modern world, the legacy of Sir Arthur's October 1945 **Wireless World** article is integral to all aspects

of our daily lives, not only at home, in the workplace, or walking along Main Street, but everywhere we are, including travelling at Mach 0.98 at 40,000 feet in the fastest of modern commercial airliners. We, that is GVF and its events partner, EMP, have recently added further exploration and analysis of this relatively new market for satellite-based connectivity in the form of the conference **GVF AeroConnect 2016 – The In-Flight Online Revolution** held in London on 11th November.

I had the pleasure of co-chairing this event along with Alexander Preston, the editor of *Inflight*, published by HMG Aerospace, and Mr Preston began the day's program with an excellent introductory overview of the global IFEC (in-flight entertainment and connectivity) marketplace, and I would recommend an examination of his report at http://prezi.com/phnfmw7654/?utm_campaign=share&utm_medium=copy to anyone interested in this important market for the satcoms sector.

Examples of some of the findings presented by Mr Preston's report, entitled **"IFEC - A Market Overview"**, are that:

- The global number of aircraft with wireless IFE (in-flight entertainment) systems is forecast to grow from a 2015 level of 4,323 to 17,506 in 2024;
- The global number of aircraft with IFC (in-flight connectivity) installed will similarly grow from 5,233 in 2015 to 19,527 in 2025;
- Projected IFEC (with both entertainment and connectivity) demand over the period 2016-25 will grow by 18% in Western Europe,

21% in the Middle East, and 26% in Asia-Pacific.

Throughout the **GVF AeroConnect 2016 – The In-Flight Online Revolution** program a highly-engaged audience, which included representatives of various airline carriers, engaged in animated dialog with members of four themed panel sessions wherein speakers provided some five-or-so minutes of introductory remarks followed by moderated discussion amongst panelists and with the audience.

GVF-EMP is pleased to provide readers of this column with access to the available slide decks which were used by many of the speakers to illustrate their opening remarks, as follows (available in PDF at www.uk-emp.co.uk/current-events/aero-connect-2016/programme/):

Session 1: Technologies – featured:

Raffaele Bonanno, Regulatory Engineer, **Access Partnership Ltd**
‘New Licensing Issues’

Kevin McCarthy, Vice President, Market Development, **Newtec**
‘Next-Generation Aero VSAT Modems’

Nick Burrett, Sales Manager, **SES**
‘Shaping the Future of Connectivity in the Sky’

Alvaro Sanchez, Sales & Marketing Director, **Integrasys**
‘Enabling Aero Growth’

Session 2: Aeronautical Applications & Passenger Services – featured:

Jags Burhm, Senior Vice President, Aero Global Mobility, **Eutelsat**
‘The Passenger In-Flight Experience as Carrier Ancillary Revenue Profit Centre’

Christian Rigal, Principal System Engineer, Commercial/Enterprise, **ViaSat UK**
‘Same Internet, Different Altitudes’

The global number of aircraft with wireless IFE (in-flight entertainment) systems is forecast to grow from a 2015 level of 4,323 to 17,506 in 2024

Ralph Wagner, Chief Executive Officer, **Axinom Aerospace**
‘Digital Platforms: Connecting and Organizing Services on the Ground and On-Board’

Session 3: Terminal Equipment – featured:

Yosi Avraham, Business Development Director, Aviation & Mobility, **Gilat Satellite Networks**
‘Working with Multiple Bands - Headache or an Opportunity?’

Mark Lambert, Vice President Sales & Marketing, **Advantech Wireless**
‘Getting In Shape for Aero’

Denis Sutherland, Vice President, Business Development, **iDirect**
‘Learning from Three Generations of Military & Commercial Satellite Aero Mobility’

David Garrood, CSO, **Phasor Inc**
‘Higher Bandwidths - Lower Costs’

Mark ter Hove, Director, Aeronautical SatCom Sales, Europe, **Cobham SATCOM**
‘Different Requirements and Solutions for Future Air Navigation Systems (FANS) Communications’

Session 4: The Expectations & Capabilities Matrix – featured:

Andrew Faiola, Director, Mobility Solutions, **Intelsat**
Title/theme: **In Space No One Can Hear You Scream (Or Can They?)**


Julian Hewson, Director Strategic Accounts IFEC, **Global Eagle Entertainment**

Title/theme: **‘Partnership & Value Creation for the Airline’**

Mohamad Chabib El Assaad, Senior Manager, Marketing, Inflight Services & Product, **Gulf Air**
Title/theme: **‘Service Strategies in In-Flight Entertainment and Communications’**

Rodney Willits, Director of International Operations, **AeroMod International**
Title/theme: **‘Deployment & Installation Planning’**

Roger Matthews, Managing Director, **GoMedia**
Title/theme: **‘A Trackside View’**

It is likely that by the time you are reading this column the next event in the GVF-EMP portfolio – the **High Throughput Satellite 2016 London Roundtable - Enabling a Brave New World of Opportunity** (www.uk-emp.co.uk/current-events/hts-london-2016/) – will already have taken place, but we already look forward to the 2017 iteration of another program in the series **GVF Connectivity**, taking place in London during February. It was 2016’s **GVF Connectivity** that provided the original stimulus for, and genesis of, the **GVF AeroConnect** series. 



Martin Jarrold is Director of International Programs of the GVF. He can be reached at

The NAB Show Makes Inroads in Asia

by Virgil Labrador, Editor-in-Chief

The NATIONAL ASSOCIATION OF BROADCASTERS (NAB) which organizes the largest broadcasting show in the world in Las Vegas every April, has spread out its influence in various continents. It has partnerships with the CABSAT show in Dubai, the premier event in the Middle East and the SET

Expo in Sao Paulo, Brazil, the largest broadcasting show in Latin America. Satellite Markets and Research is a media partner and regular exhibitors at the aforementioned shows and we checked out the newest foray of the NAB in Asia—the NAB Show Shanghai held

December 6-9, 2016.

The NAB announced registered attendance increased fivefold for the second annual NAB show Shanghai, held at the Shanghai International Expo Center. The event, which was co-produced by the International High Tech Device Cluster, attracted over 5,000 attendees from around the world, representing a 525% increase over last year.

The 2016 NAB Show Shanghai also included for the first time, a full-fledged exhibit floor, spanning 50,000 square feet and featuring 145 media and technology companies, including leading companies like Akamai Technologies, Ricoh, L-3, Sony and Tata

Communications, among others.

NAB launched NAB Global Innovation Exchange during its first show in Shanghai in 2015, recognizing China's growing media industry and the need for collaboration on emerging technol-



ing new heights as indicated by this year's growth in attendance and exhib-

its. We look forward to continuing to develop this unique convention as it becomes the premier event of its kind."

Speakers from NAB included COO Chris Ornelas and CTO Sam Matheny, in addition to high-ranking Chinese government officials and media and technology professionals from Canada, Hong



ogies and global business solutions. Designed for media professionals involved in the creation, management and distribution of content across broadcast and digital mediums, NAB Show Shanghai has since evolved into a one-of-a-kind convention for showcasing cutting-edge technology, promoting innovation and offering the opportunity for content creators to gain global perspectives and valuable tools to advance their craft.

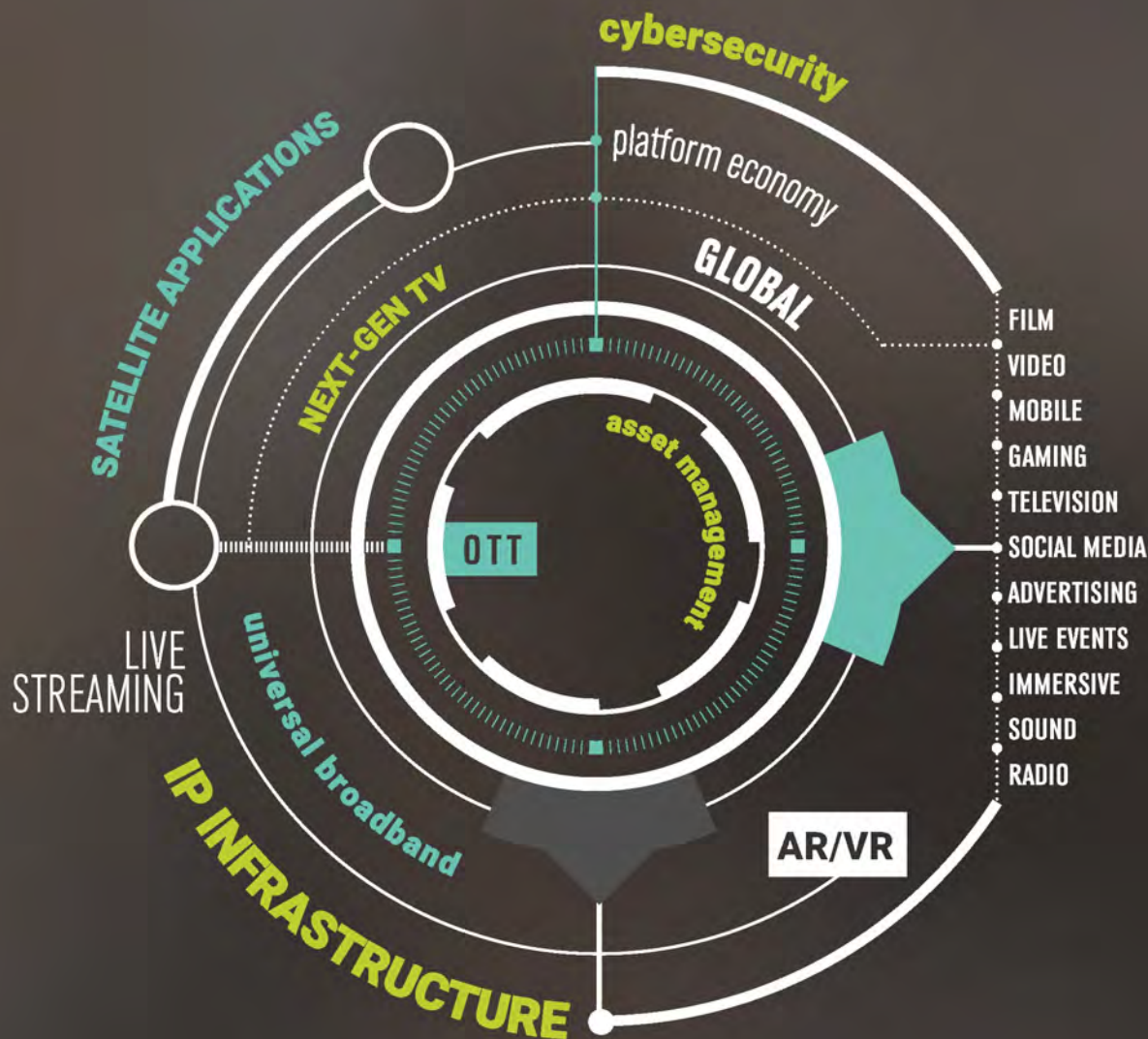
NAB EVP Conventions/Business Operations Chris Brown commented, "This event plants the NAB and NAB SHOW flag in one of the fastest growing media markets in the world. NAB Show Shanghai is taking off and reach-

Kong, India, Taiwan, the UK and the US, among others.

In 2017, the NAB Shanghai will be held June 13th-15th in conjunction with the prestigious Shanghai International Film and Television Festival. No doubt holding the show in the summertime and co-locating it with a major film festival should drive attendance.

The NAB Show Shanghai is still too focused on the Chinese mainland market, which is a large market for broadcasting but rather limited in satellite. The show will continue to evolve over time and judging from the fivefold increase in attendance from its first inception to its second, the future seems bright for this show.





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LET'S THRIVE.

Newtec Appoints Van den Driessche CEO

Sint-Niklaas, Belgium, December 21, 2016--Newtec's Board of Directors has appointed

Thomas Van den Driessche,

who was named Chief Commercial Officer four years ago, to succeed Van Herck as CEO, effective



Van den Driessche

from January 1, 2017. After ten years of dedicated and successful leadership CEO Serge Van Herck has decided to resign and move his career in another direction. Newtec is grateful to Van Herck for his leadership over the past decade and wishes him all the best with his new undertakings.

Dirk Breynaert, Co-founder of Newtec, said: "We appointed Serge ten years ago, with the goal of taking Newtec to the next level and it is great that we have been able to achieve such success. I am grateful that Serge leaves behind a well-coached team that will be able to further realize our growth ambitions."

Van Herck said: "It has been an honor and a privilege to lead such a great team for the past ten years and I congratulate all Newtec colleagues for the impressive achievements we have been able to realize. I thank Dirk and Jean-Marie Maes, our company's founders, for the unique opportunity they gave me to lead this team. Last but not least, I want to thank all of Newtec's customers and business partners for providing us with their trust and business."

Newtec's new CEO Thomas Van den Driessche added: "We are all looking forward to continuing on the strategic path that steers Newtec and our customers alike. There are so many com-

mon goals that lift the whole of our industry. It is this excitement that is fueling our results and motivating our team."

After years of successful building, resulting in the market-driven and product-leading company that Newtec has become,

The Newtec's Board of Directors, Van Herck and Van den Driessche are committed to a smooth transition that will pave the way to meeting Newtec's goals in 2017 and beyond.

Gregg Daffner Elected APSCC President

Seoul, Korea, December 15, 2016--

Gregg Daffner CEO of **GapSat**, was elected and inaugurated as the President of APSCC at the 2016 APSCC General Assembly held on 13 December. As the main representative of APSCC, Gregg will be responsible for setting the policies and goals of APSCC in consultation with the APSCC Board of Directors, Vice Presidents and Executive Director.

At the General Assembly Gregg said, "I would like to express my sincere gratitude to the members of the APSCC for your dedicated support to the organization. APSCC will continue to develop a variety of programs to make APSCC a more relevant organization to the satellite industry. APSCC will undertake the lead in the core activities to represent the APAC satellite industry including regulatory advocacy, especially in matters of preserving satellite spectrum, and in attracting our next generation of satellite professionals."

Gregg is CEO of GapSat, an innovative venture that leases or arranges for the lease of entire in-orbit satellites to satellite operators for use at their orbital slots for interim periods of time, generally until the operator launches its own custom-built satellite. Gregg is also president of G3 Global Communications, a satellite consulting firm focused on strategic planning, business development, transactional and regula-

tory advice. Previously Gregg co-founded and was president of Asia Broadcast Satellite (ABS).

He is a former television producer and communications attorney who was the head of satellite services for Cable & Wireless Hong Kong Telecom, Vice President for PanAmSat and Lockheed Martin Corp, and Director of International Policy for the US Department of Commerce, National Telecommunications & Information Administration (NTIA) where he was instrumental in the promotion of private enterprise in space.

Gregg is a founding member and a Director serving since the inception of APSCC in 1994; the Chairman of the Cable and Satellite Broadcast Association of Asia (CASBAA) Satellite Wireless Action Group; a member of the Board of Governors and Secretary of the Pacific Telecommunications Council (PTC); and the Asian Attache for the Global VSAT Forum (GVF).

Also, at the General Assembly members of the APSCC Board of Directors for the 2017-2018 term were nominated and approved.

The 15 members of the Board are: **Tom Choi**, **ABS**, **Richard Bowles**, **Arianespace**, **Baozhong Huang**, **APT Satellite**, **Thomas Carroll**, **ILS**, **Terry Bleakley**, **Intelsat**, **Peter Jeon**, **ktsat**, **Hiroshi Koyama**, **Mitsubishi Electric**, **Eddie Kato**, **New York Broadband**, **Deepak Mathur**, **SES**, **Kian Soon Lim**, **SingTel**, **Mitsutoshi Akao**, **SKY Perfect JSAT**, **Tom Ochiner**, **SpaceX**, **Daryl Mossman**, **SSL**, **Dani Indra**, **Pasifik Satelit Nusantara**, and **Sandy Gillio**, **Thales Alenia Space**.



Gregg Daffner



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Euroconsult Projects Continuous Growth in Maritime Satellite Market

France, November 17, 2016 - According to Euroconsult's newly-published report, Prospects for Maritime Satellite Communications, in 2015 the global maritime satellite communications market reached close to 338,000 terminals, \$953 million in revenue at the satellite operator level and \$1.7 billion in revenue at the service provider level. The value of the maritime satcom market will continue to grow over the next decade, with a CAGR of 5% in terminals and revenue over the 10-year period. Ever-increasing data communications needs and the massive launch of new generation High Throughput Satellite (HTS) systems are expected to drive growth.

The collapse in oil prices and the global oversupply in the merchant sector, which particularly affected bulkers, have continued to negatively impact the maritime sector overall in 2016, resulting in a number of vessels decommissioning. However, demand for maritime satellite communications continued to grow, driven by increasing operational communications needs, as opposed to crew communications a few years ago. Even though crew communications still represent the vast majority of a ship's consumption, vessels' operators are increasingly interested in big data-driven applications that improve operational efficiency. As a result, the number of VSAT terminals grew by 9% in 2015 to reach more than 16,000 com-

mercial active terminals at year-end. A total of 8.5 Gbps of C-, Ku- and Ka-band capacity was used for maritime VSAT business, compared to less than 2 Gbps in 2010.

"2016 was an important milestone for maritime satellite communications. It marked the entry into service of HTS satellites with a major maritime focus,

panel antennas in 2017, will drive demand for more bandwidth-hungry applications such as big data analytics and video streaming applications."

Regarding MSS services, competition and migration to VSATs will continue on large vessels. However, the development of smaller and cheaper MSS broadband terminals covering basic communications needs of small vessels will open up a new market for MSS broadband. This low-ARPU yet high-volume vertical market is expected to be the main growth driver for MSS services. Consolidation in the sector is expected to continue and will benefit service providers with higher purchasing power and economies of scale. We will see consolidation among both maritime players (as demonstrated by the recent acquisition of CapRock by SpeedCast) and other mobility vertical (such as GEE's acquisition of EMC).

Prospects for Maritime Satellite Communications provides an in-depth view of the sector dynamics, analysis and forecasts for the maritime satcom market. Five comprehensive sections give a detailed analysis of trends and prospects within the major addressable maritime market segments, including merchant shipping, fishing, passenger ships, leisure vessels, and offshore. The report includes maritime infrastructure revenues by technology, MSS terminals by application, VSAT terminals by frequency band and segment, and tier-1 service providers' revenues by business (MSS & VSAT).



The Satellite Markets 20 Index™

Company Name	Symbol	Price (Jan 03)	52-wk Range	
Satellite Operators				
Asia Satellite Telecommunications Holdings Limited	1135.HK	9.50	9.15	12.00
Eutelsat Communications S.A.	ETL.PA	18.60	15.19	30.28
APT Satellite Holdings Limited	1045.HK	3.68	3.64	6.73
Inmarsat Plc	ISAT.L	757.50	663.50	1131.75
SES S.A.	SES.F	21.33	18.14	26.10
Satellite Manufacturers				
The Boeing Company	BA	158.62	102.10	160.07
MacDonald, Dettwiler and Associates Ltd.	MDA.TO	68.35	64.04	92.92
Lockheed Martin Corporation	LMT	253.99	200.47	269.90
Orbital ATK, Inc.	OA	90.25	67.04	94.92
Honeywell International Inc.	HON	116.50	93.71	120.02
Equipment Manufacturers				
C-Com Satellite Systems Inc.	CMLV	.99	.85	1.29
Comtech Telecommunications Corp.	CMTL	12.45	9.52	25.09
Harris Corporation	HRS	103.28	70.97	107.54
ViaSat Inc.	VSAT	65.84	56.02	82.19
Gilat Satellite Networks Ltd.	GILT	5.05	3.28	5.50
Service Providers				
DISH Network Corporation	DISH	60.39	38.85	60.39
Orbcomm Inc.	ORBC	8.41	6.80	10.98
Globalstar Inc.	GSAT	1.71	0.63	3.00
Sirius XM Holdings Inc.	SIRI	4.53	3.29	4.65
Sky plc	SKY.L	987.50	560.00	1134.00

The Satellite Markets 20 Index™ is a composite of 20 publicly-traded satellite companies worldwide with five companies representing each major market segment of the industry: satellite operators; satellite manufacturers; equipment manufacturers; and service providers. The base data for the Satellite Markets Index is January 2, 2008 - the first day of operation for Satellite Markets and Research. The Index equals 1,000. The Satellite Markets Index™ provides an investment benchmark to gauge the overall health of the satellite industry.

INDEX	Index Value (Jan 03)
Satellite Markets 20 Index™	2,747.48
S & P 500	2,270.75

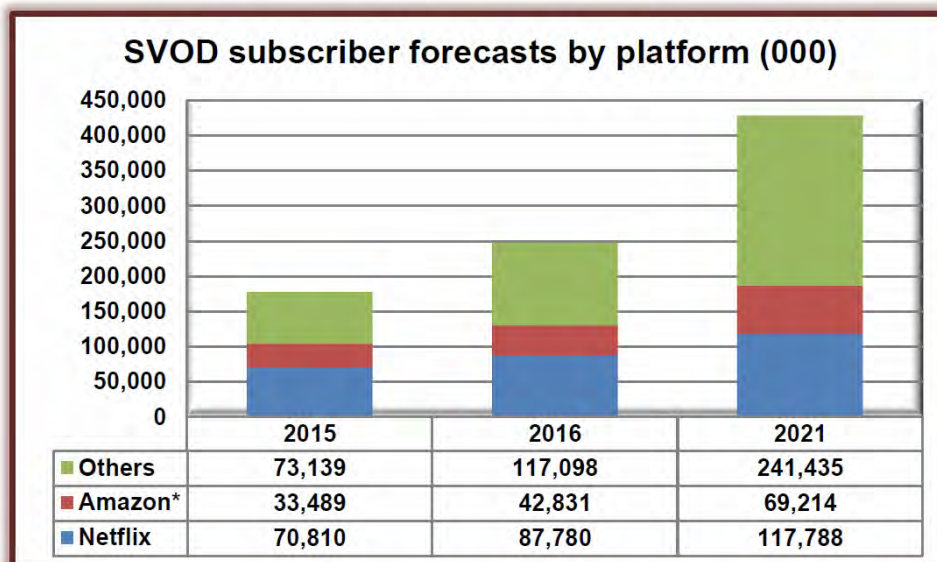
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Global SVOD Subs to Reach 428 mil. by 2021



Source: Digital TV Research

The number of SVOD [subscription video on demand] homes is forecast to reach 428 million across 200 countries by 2021, up from 177 million in 2015 and an expected 248 million by end-2016. The total will grow by 70 million in 2016 alone, according to the Global SVOD Forecasts report.



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