

The Vital Link: Developments in Satellite Hardware

by **Bruce Elbert**
President, Application Technology Strategy

Users of communications satellites often ignore the actual hardware in space that makes their applications possible. To help fill this gap, we review some recent trends and developments of the kinds of satellites that operators are launching. This is not intended to encompass all of the systems and services that make up the industry, but rather selects some of the more salient elements that can contribute to industry innovation and future growth.

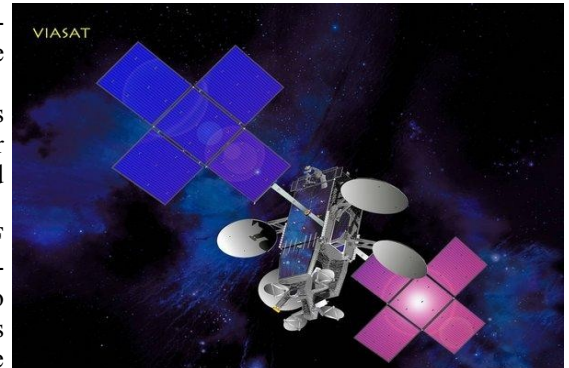
Orbital Capacity

There are more than 250 geostationary earth orbit (GEO) communications satellites serving the global market for bandwidth and applications. These spacecraft have satisfied demand in commercial use principally for television and broadband interactive services; governments also rely on them to reach remote locations and provide the needed overlay for control and coordination. With the consolidation of satellite operators into four large companies and several mid-size players, the industry has a good financial and business foundation that allows it to replace spacecraft with newer models built mainly in the US and Europe. But, the question arises as to how these replacements will better address the evolving needs of an evolving marketplace.

Configuration Trends

As we all know, a satellite is hardware that performs its mission in accordance with the laws of physics. The math that defines the process of operating the satellite hasn't changed since the launch of the tiny Early Bird GEO satellite in 1965, although

many advances have facilitated large vehicles weighing over 5,000 kg and broadcasting 10 kW of RF power. Economics also play a role as they dictate what is feasible from the standpoint of the cost of building/launching/operating a satellite in relation to the revenue derived there from.



Scheduled for launch in 2011, the Space Systems Loral-built Viasat-1 will be one of the most powerful satellites in the geostationary arc. (photo: Space Systems Loral)

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The European Market



If the two leading European satellite operators financial health are any indicators of the strength of the European satellite market, then the European market is doing well, indeed.

Paris-based Eutelsat's financial results for the year ended June 30, 2010 show that the company surpassed all its targets, achieving record growth of over 11%. Revenues for the year amounted to €1,047.2 million, an 11.3% increase on the corresponding period ended June 30 last year, while EBITDA was up by 11.5% to €827.8 million and the group share of net income by 9% to €269.5 million.

Luxembourg-based SES didn't do too badly either with modest revenue growth at 844.9 million euros (\$1.1 billion), an increase of 4.5 percent compared to the same period last year. SES is trying to divest itself of its subsidiary ND Satcom, which it categorized in its financial report as a "discontinued operation." Meanwhile, SES is bullish of its investment in the O3B Networks.

The general economic developments in Europe seems to point to a recovery there. The Euro is gaining back value from the US dollar and European markets are showing signs that it's holding well amid the shocks in Greece and Spain.

Next month, the industry's spotlight will be on the European market with the Satellite Business Week organized by Euroconsult in Paris from September 6-9 and IBC in Amsterdam from September 10-14. There's also the COMSYS VSAT Conference in London from September 14-17. Satellite Markets and Research will be covering these important events, so watch out for coverage in the September issues of the Satellite Executive Briefing. Also, if you are attending IBC, be sure to drop by the Satellite Markets and Research booth between Halls 8 and 9. See you there!



Virgil Labrador

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...Developments in Satellite Hardware... from page 1

The interplay of economics and physics, along with the limits of available rocket performance and constraints of keeping high powered satellites healthy in orbit, probably restrict basic vehicle growth from this point. This is still subject to further innovations that might allow the power generation systems to deliver more output and innovations in areas such as RF amplifiers and antennas that can increase the actual communications capability of a given satellite. But these are more evolutionary in nature, resulting in incremental improvements over the coming years.

There is the occasional step function that changes a paradigm, such as the development of the 66-satellite Iridium LEO constellation or the construction of ViaSat-1. Both of these caused some others to follow with similar approaches. Still, the basic hardware elements do not change but are only configured differently for service. Motorola and

Lockheed Martin constructed Iridium out of a simple satellite design that was not, by itself, particularly innovative. Similarly, ViaSat-1 is comparable in size to other GEO satellites but gains its bandwidth mainly by frequency reuse.

Backlog

Satellite manufacturers experience buying cycles due to the relatively long life of the hardware in orbit. There have been substantial peaks and valleys of purchase by the operators, who in turn are working to maintain orbital capacity from decade to decade. For example, the end of the 1990s saw a tremendous

build up of purchase and construction, followed by what appeared to be a collapse. In reality, it was the normal cycle repeating itself. This is a problem for manufacturers who would like a steady

-1 and acquisition of Wild Blue, and Inmarsat has indicated an interest in expanding from their very comfortable base with L-band into a Ka-band system. Satellite manufacturers can benefit from the latter type of business, although they may end up sharing some of the risk of failure if the underlying service business does not develop.

Service Trends

The primary role of a satellite is to provide a radio relay in space and thereby connect or deliver information to many locations across a wide coverage area. How you use this resource is only a question of the need for such communication, the kinds of user terminals to be employed, and the business model within which the satellite performs its function. GEO operators like Intelsat and Inmarsat traditionally focused on the aforementioned primary role and left the issues of service and user access to their respective customers for satellite bandwidth. DIRECTV and Iridium did much to change this model as these companies addressed the space segment, the ground segment, and service to the end user (although both companies engaged partners where markets were local in nature).

With all forms of video still representing the lion's share of usage and revenue of GEO satellites, the interactive broadband segment is showing encouraging signs. Remote access to the Internet has a strong following in North America and less so in western Europe. But it is in the emerging and developing world where this type of service is expanding rapidly. This is difficult to track because of market fragmentation due the proliferation of service providers who purchase their equipment from leading manufacturers and satellite capacity from the operators. Many of these service providers are private or part of a much bigger organization, so



TerreStar-1 pictured here, has an 18-meter antenna reflector, is the largest commercial satellite ever launched to date. (photo: Space Systems/ Loral)

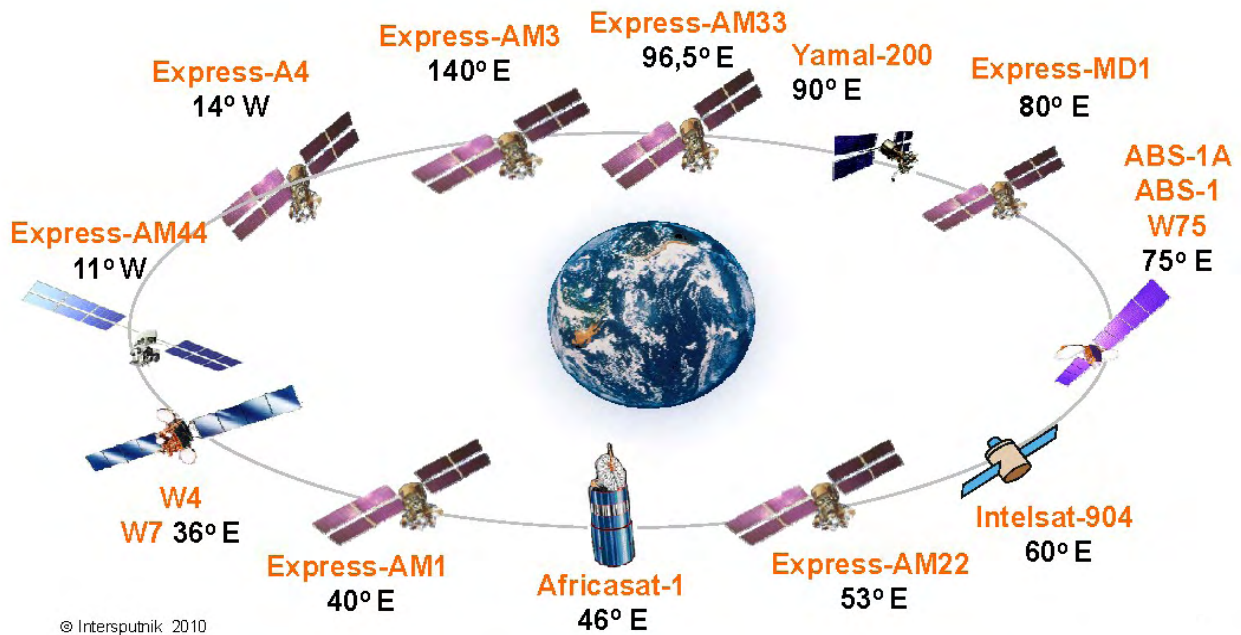
and hopefully increasing flow of satellite construction programs. New construction is principally for replacement satellites (as operators seek to maintain occupancy of orbit slots and the revenues derived there from), but startup ventures appear from time to time. This also includes when an existing operator works to expand their business by launching satellites in new frequency bands or with capabilities to address new markets. There are startling success stories like DIRECTV and HOTBIRD, but equally startling failures like pre-bankruptcy Iridium and Astrolink. Currently, ViaSat has moved to become an operator through construction of ViaSat



The Intersputnik International Organization of Space Communications was established on November 15, 1971. Today, Intersputnik has 25 member states in practically all parts of the world from Latin America to Southeast Asia and from Europe to the south of the Arabian peninsula.

Intersputnik's core business is to make satellite capacity available to telecommunications operators, broadcasters and corporate customers under agreements with partner operators and to offer full-scale services via its subsidiary **Intersputnik Holding, Ltd.** for the purpose of installing and operating satellite telecommunications networks. Such full-scale services include access to internet backbones, uplink services, switching and digital platform services as well as supply and integration of ground equipment. The Russian satellite telecommunications operator **Isatel LLC**, which is part of the Intersputnik Holding, Ltd.

Intersputnik Satellite Fleet Overview



group, offers Russian and international telecommunications operators and corporate customers the required technological platform for the establishment of satellite telecommunications networks and provision of telecommunications services based on this platform.

Today, Intersputnik provides to its customers the resource of telecommunications satellites located in the geostationary orbit from 14W to 140E. One of our key partners is the **Russian Satellite Communications Company**, which owns a fleet of advanced Express-series satellites. Also, Intersputnik enjoys the status of the official distributor of Eutelsat's satellite resource and Measat's resource on the AFRICASAT-1 satellite. It markets and sells Intelsat's satellite capacity and offers service on the ABS-1 (LMI-1) satellite.

Intersputnik distinctive feature and main advantage is that it is an all-purpose supplier of satellite capacity and technological solutions. This is why Intersputnik's government and private customers in over 40 countries have a very wide choice of satellite resources in various systems operating on the global market and can receive all kinds of information from a single source.

Intersputnik's principal asset is its long-standing experience while the availability of its own orbit and spectrum resource guarantees its successful development. Using this resource, Intersputnik is implementing projects aimed at procuring and deploying spacecraft in its own orbital positions to provide service in the most rapidly developing regions with growing demand for satellite telecommunications services. For more information go to: www.intersputnik.com

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usage and revenues are not publically available. The fact that Fixed Satellite Services (FSS) satellites serve nearly the entire globe makes it relatively easy for broadband Internet service to be put up and address a small but lucrative market.

The mobile satellite service (MSS) sector is still dominated by Inmarsat and regional operator Thuraya, both of which employ GEO multibeam satellites, and Iridium, the surviving big low earth orbit (LEO) system. It was the belief back in the 1990s that MSS would become a personal communications service through handsets that were "pocket sized". However, the limitations of the service and awkward size of the handsets were not accepted by a broad market. Today, most of the growth in MSS usage is for government applications and commercial uses for

what is termed "machine-to-machine" communications.

The Digital Audio Radio Satellite (DARS) application segment was pioneered by WorldSpace and introduced within the US by operators XM and Sirius. The latter two companies merged and their service has achieved wide acceptance by the US driving public. Sirius XM is broadcast by geosynchronous satellites (XM's are GEO and Sirius employs a combination of satellites in the Tundra highly inclined orbit along with one GEO). Receiving antennas are simple in design and the actual receivers low in cost. Satellite signals are augmented by a terrestrial broadcast infrastructure within urban areas because any blockage will interrupt line-of-sight propagation from space.

The operational success of DARS in the US (although Sirius XM has yet to show a profit) has encouraged MSS operators in the US to pursue what is called Ancillary Terrestrial Component (ATC), an amalgam of two-way MSS service as offered by Thuraya and a wireless terrestrial system of cellular-type towers. ICO and TerreStar have both launched S-band satellites to initiate the space portion, and SkyTerra is expecting to get their first new L-band satellite into service within the coming year. The ATC mission looks good in principle as it allows a user to employ wireless base stations where available and seamlessly transfer to the satellite in remote, open areas. TerreStar has demonstrated an attractive smartphone device called the Genius™ that would have many familiar features; however operators have not yet completed a functional satellite and terrestrial wire-

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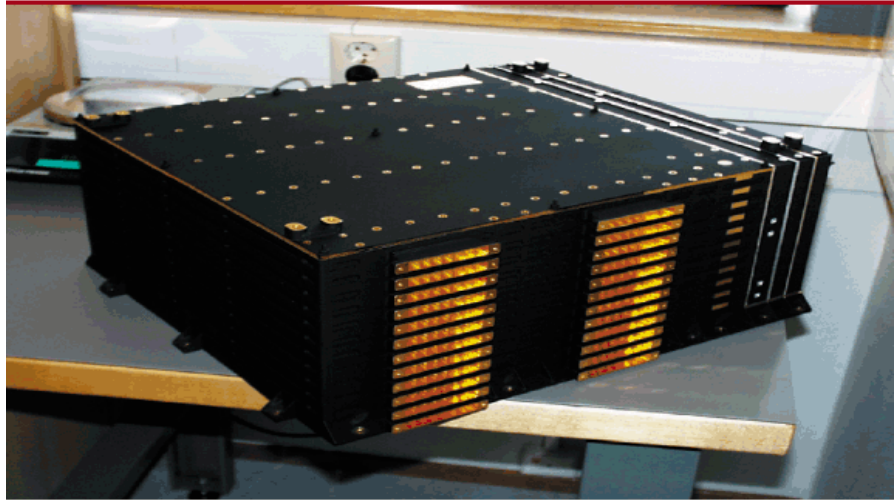
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less network that works together as a coordinated system.

There is yet another important application that represents a coordinate use of satellite communications in conjunction with cellular and other wireless terrestrial services. Termed “cellular backhaul”, it links remote base stations with a switching center in a major city. This application currently employs C and Ku band FSS satellite capacity in every region of the world. Growth of cellular backhaul around the world has caused satellite operators to view this as a very significant market segment in coming years.

Needs to be Filled

The Satellite Industry Association (SIA) and the World Teleport Association (WTA) along with other satellite industry groups continue to express optimism for our current and future prospects. There is now wider acceptance of satellite communications than ever before. For example, many IT organizations



Inmarsat 4 Digital Transparent Processor (DTP) performs on-board digital processing of the signal without demodulation and decoding. It is implemented between pre- and post-processors, assuring RF-to-baseband and baseband-to-RF conversions.
(photo courtesy of Alcatel Alenia Space)

that once shunned satellite for its inherent propagation delay and bandwidth cost are now embracing it as a reliable means of reaching users in remote places or traveling in various modes of

transportation. The ability of satellite links to provide medium and high data rate services is well recognized and the simplicity of the satellite network itself tends to simplify the job of the IT manager as well.



Boeing introduced the 702MP spacecraft in 2009 to meet the needs of customers seeking satellites in the middle-level power ranges. Its flexible design supports payloads that range in power from six to 12 kilowatts (image of Intelsat 21 courtesy of Boeing Satellite Systems)

Satellite ground equipment is also more affordable in relation to the overall cost of service and no longer requires extensive technical training for the end user (service providers, however, still need a solid understanding of how this technology works and can be brought into use). Link capabilities are also improved with ground technology innovations like DVB-S2 and carrier-in-carrier transmission.


The technology that goes into the satellite is not much different today and innovation comes mainly in terms of the architecture employed in space and on the ground. Satellites only differ in terms of the quantity of components used to create the communications payload and spacecraft bus. The efficiency of converting solar energy into DC power has experienced a steady rise due to better solar cells, and larger solar

panels are introduced to grow the overall power level. Also, digital processing is now far beyond what we carried as recently as 2000. The first major innovation was the on-board processor, brought to operational status in Spaceway, Thuraya and Inmarsat 4. These satellites, unlike Iridium and GlobalStar, create their cellular beam patterns using digital beam forming. As a result, the beam patterns can be changed to match traffic needs. The same adaptability will be provided using ground-based beam forming on TerreStar, Sky-Terra and ViaSat-1; Hughes recently elected to procure such a satellite as well.

Satellites are also available in various physical sizes to better match the need of the satellite operator. Orbital Sciences and Boeing are producing spacecraft to serve the under 8 kW market where as few as 24 transponders are appropriate. Larger quantities of transponders, with greater power as well, can be accommodated onboard medium to large satellites built by Space Systems/

Loral, Boeing, Lockheed Martin, EADS Astrium and ThalesAlenia. On the upper end of the spectrum, a satellite operator can purchase and subsequently launch a GEO satellite with over 20 kW of DC power at end of life and with a reflector antenna up to 20 meters in diameter.

New space hardware located at good orbit positions is very much a valuable resource, in terms of power and bandwidth available. These are the strong suits of the leaders: Intelsat, SES, Eutelsat and Inmarsat. ViaSat claims that its satellite can deliver 130 Gbps, which is impressive on its face. Likewise, large

reflectors on spacecraft like TerreStar give the operator the means to deliver medium data rates to a multitude of customers using as little as 25 MHz of aggregate spectrum. Neither of these capabilities would have been possible in 2000. At the same time, Intelsat and Inmarsat demonstrate how incremental improvements in space hardware help grow what are already the highest operator revenues in the world. So we see that these satellite hardware advances help drive the leaders and the overall industry forward. 



Bruce Elbert has over 30 years of experience in satellite communications and is the President of Application Technology Strategy, Inc., which assists satellite operators, network providers and users in the public and private sectors. He is an author and educator in these fields, having produced seven titles and conducted technical and business training around the world. During 25 years with Hughes Electronics, he directed major technical projects and led business activities in the U.S. and overseas. He is the author of *The Satellite Communication Applications Handbook*, second edition (Artech House, 2004).
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The Maritime Satellite Market: Poised for Growth

By Bernardo Schneiderman

Photo courtesy of Intellian Technologies.

The demand for mobile satellite services (MSS) in the maritime sector has been growing during the last 10 years as a consequence of increased availability of global satellite capacity and the introduction of new VSAT antenna and modem technology, among other factors. The forecast for the next five years for the MSS market is a consistent double-digit growth in key markets such as the Offshore Communications, Ocean Cargo, Cruise Ships and Leisure Boating segments. Demand for satellite services come in different forms. Crews in commercial ships and leisure boat guests are beginning to expect Internet connectivity and cellular access with the same standard and quality that they get on land. As equipment and solution prices continue to go down, smaller vessels are beginning to embrace satellite technology as well.

Ship and offshore fleet owners are actively adopting satellite communication to attract and retain skilled crew in this highly competitive marketplace. Pressures to manage cost and large fleet sizes have forced ship owners to consider applications for weather, routing, monitoring, and security to gain an advantage over the competition.

Frost & Sullivan released in 2009 the “Maritime Market Study - Satellite Communications” which revealed that satellite maritime market earned revenues of over \$9.20 billion in

2008 and estimates that the market will reach \$27.36 billion in 2013. The study showed that factors such as increasing demand for bandwidth from the next generation of crews, and land-based applications moving to the maritime environment are boosting the MSS market prospects. There is stiff competition from low-cost, fixed rate very small aperture terminal (VSAT) services. Hybrid solutions that offer ‘least cost routing’ as well as declining equipment and services prices can supplant MSS as the main choice for communications on board vessels.

The pay-as-you-go model, bundled plans, and pre-paid minutes resulted in prohibitive air time charges for high usage customers. The service charges are lower for VSATs and the initial investment is becoming more affordable for owners of medium and large size fleets. As bigger vessels look to manage their cost and streamline their fleet management through higher bandwidth applications, MSS operators have stimulated demand by devising creative pricing schemes and rolling out products that have bridged the gap at 512 Kbps to 2 Mbps uplink to 4-10 Mbps downlink and up to support individual client requirements and the maritime community.

The key segments in the maritime market include: Cargo Vessels; Leisure Vessels; Fishing Vessels; Offshore Platforms; Workboats; Oil & Gas vessels and the Defense and

Homeland Security Vessels. Providing solutions for these markets are Satellite Operators; Maritime Services Providers; Stabilized Antennas Manufacturers; and Satellite Modem and VSAT Manufacturers. We will discuss each of these segments in this article.

Satellite Operators

Inmarsat was the first operator to specialize in maritime satellite communications. The organization was founded in 1979 to provide reliable communications to ships at sea. The organization was formed as a consortium of over 80 nations and operated a constellation of satellites which covers the Atlantic, Pacific and Indian Oceans with L-band coverage. Originally, Inmarsat's core services were circuit switched voice and Telex, but as demand grew, the organization introduced new services providing higher data throughputs.

Today the way business is conducted in the maritime sector has changed significantly since the advent of Inmarsat. Currently satellite communications is one of the key baseline services in the commercial shipping industry, with an emphasis on speed, just-in-time delivery and always-on communications.

Traditionally, the industry has been slow to adopt new technologies, however new business dynamics are forcing the entire market to adjust. Inmarsat just announced early this month of July a plan to purchase from Boeing four large Ka-Band satellites for the mobile broadband market not only in the maritime but in the terrestrial business.

Beside Inmarsat, L-Band global providers Iridium, Thuraya, and Globalstar have launched services aimed at maritime users and have begun to gain inroads into Inmarsat's market share for the last 10 years. A key development was the introduction of stabilized platforms, which allow VSAT antennas to remain locked on a satellite even

though the ships they are mounted on are rolling or pitching from side to side. Now Inmarsat is facing a new generation of competitors that are providing C- and Ku-Band VSAT services.

Beside the traditional providers of satellite maritime communications



Orbit's OrSat stabilized antenna for maritime applications.
(photo courtesy of Orbit)

(Inmarsat, Iridium, Globalstar), global satellite operators like Intelsat, SES, Eutelsat and other regional and domestic satellite operators are entering the maritime market with powerful transponder beams and the support of low cost VSAT equipment and stabilized antennas on the ground.

Additionally some companies like Schlumberger, CapRock, Stratos Global (which was purchased by Inmarsat recently) and regional and domestic satellite communications providers are among the solution providers competing in the maritime market segment.

With the expansion of the VSAT services beyond internet connectivity, one popular trend is the deployment of picocells on ships. The picocells connect to broadband VSATs, and the cell phone traffic is backhauled back to

shore via satellite. Picocell technology is becoming a standard in the Cruise ship business.

The picocells allow guest and crew members to use their existing cell phone while the ship is at sea to call home or any part of the world. With WiFi application in major cruise and cargo vessels, it is possible to gather data remotely for supervisory, control, data acquisition, asset monitoring beside internet access. Another driving factor is automation and remote monitoring systems for navigation which allow shipping companies to keep track of a ship's vital functions remotely. Two decades ago a commercial shipping vessel would need a crew of about 40 to go to sea. Today a ship would need half that number due to the advances in satellite communications and automation.

The increasing use of automation makes a ship's information technology infrastructure and network connectivity extremely important. Automation allows a shipping line to manage a ship's entire infrastructure while it is at sea, even if the main VSAT link is down. The ability to monitor satellite modems, stabilized antennas, routers, switches, servers and PBXs for anomalies, upgrade operating systems, and reboot equipment automatically improves network uptime and minimizes the amount of information technology training for crews. Shipping companies are not the only fleet managers faced with employee retention and moral. Navies, offshore, workboats around the world face the same issue. Cell phone and Internet connectivity, as well as marine TVRO systems, are being deployed to improve the quality of life for sailors and cruise ship guests.

Stabilized VSAT Antennas

Stabilized antenna systems are a critical component of maritime satellite services. Although there are different designs, antennas generally can twist and turn in multiple directions at once. Us-

ing inputs from a gyroscope or GPS compass to give it perspective, a stabilized platform makes constant adjustments to keep the antenna pointed at the satellite. Saltwater and electronic components need to be protected so a radome cover is used to keep waves, spray and mist off the antenna system.

Among the major manufacturer of stabilized satellite communications antennas include Cobham SeaTel, Orbit Marine, Intellian Technologies and KVH, among others.

SeaTel is the market leader in stabilized VSAT platforms with nearly 72 percent market share, according to a Comsys report issued recently. SeaTel's Product Marketing Manager Atul Chawla shared his views on the satellite antenna market: "We see relatively strong growth returning to the market. The communications and DBS business for the mari-

time sector are expected to grow at around 10 to 15% growth. Commercial shipping is expected to finally break open somewhat. The industry is expecting wider adoption of satellite communications in this sector. Leisure market should return to more normal growth within the next 5 years. The geographic areas such as Brazil, India, China and Africa will see above average growth for our industry."

Orbit Marine of Israel is the second largest supplier of stabilized VSAT antennas with more than 17 percent of the market. The remaining 11 percent of the market is made up of a number of companies, including Schlumberger, the global oil and gas services firm that manufactures stabilized antennas for its own use.

Orbit just announced in June that Hong Kong-based service provider SpeedCast

selected Orbit's OrSat-G antenna for its Global Ku-Band Network to provide uninterrupted, broadband communication services across all major maritime routes. After conducting exhaustive tests of global marine antennas, SpeedCast selected Orbit Technologies' OrSat-G (AL-7103) marine antenna to optimize its continuous Ku-band coverage. SpeedCast worked together with Orbit to help integrate Orbit's OrSat-G antenna into its global Ku-band Network and has now incorporated it into SpeedCast's product portfolio as one of its global marine antennas OrSat-G is Orbit's most advanced 1.15 meter Ku-band Offset Gregorian antenna system, boasting automatic beam switching between satellites.

SpeedCast has also selected the OrSat-G for use in their turn-key maritime communications solutions. These complete packages provide a single bundled

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solution for maritime customers, with all of the equipment required to deliver uninterrupted communications services to their vessels.

New players in the stabilized antenna market are emerging from South Korea among them KNS and Intellian Technologies.

KNS is Located in DaeJeon, the research and development capital of South Korea. KNS has recently developed a cost effective antenna series in cooperation with ASTRA Broadband services, Europe's leading provider of satellite services, and H2O Satellite, a provider of maritime communication solutions.

Intellian Technologies has been garnering significant market share in recent



KNS antenna mounted on a workboat operating in rough seas. (KNS photo)

years. A fairly young company, Intellian began with a 45cm Television Receive Only (TVRO) antenna model for the pleasure boat market. Now it has a full line of over 28 TVRO and VSAT antenna models. Recently Intellian achieved the installation of its 13,000th antenna in five short years. An important distinction of the company is their

focus on hardware; "we design innovative antennas to meet today's standards of durability through stringent military-level testing standards that keep Intellian solutions on the cutting edge," according to Christi Hendricks, Intellian's Marketing Communication Manager.

Satellite Modem and VSAT manufacturers

The major manufacturers of VSAT equipment are Hughes Network Systems (HNS), Gilat Satellite Networks, Viasat and, iDirect which provide turn-key solutions directly to customers or through partners such as CapRock, Schlumberger, Telespazio and other service providers.

As the market for maritime satellite services has expanded the number

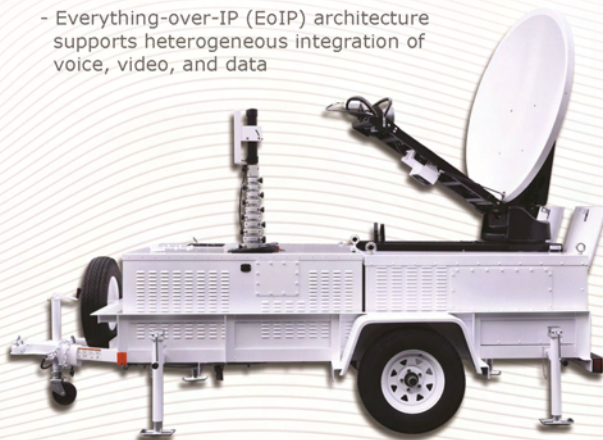
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INTEGRATED EMERGENCY COMMUNICATIONS GATEWAY



of service providers has risen as well. Comsys estimates that 20% of nearly 150,000 vessels identified are untapped potential customers for VSAT services, and the number of VSAT operators who now target the maritime market has grown from around 10 a few years ago to more than 90 companies today.

Over the last 10 years companies such as CapRock, Schlumberger, Stratos and Broadpoint have expanded to provide communication services on a global basis. These companies expanded into commercial shipping and other maritime civil and defense markets. Vizada (formerly Telenor) and MTN began offering broadband VSAT services to commercial shipping and cruise lines.

The growth of broadband VSAT services has affected Inmarsat's business. Inmarsat's service is limited in terms of the amount of available L-band bandwidth and this in turn means that bandwidth is relatively expensive when compared to fixed satellite services capacity. Consequently, Inmarsat's services are mostly charged by volume - whether this is in minutes or megabits per second and heavy volume users can face very large monthly bills as a result.

Future Market Trends

The maritime industry's demand for satellite bandwidth, VSAT equipment and stabilized antennas will continue to grow in the next decade. With global satellite coverage available in Ku-, Ka- and C-Band vessels can travel worldwide seamlessly with ubiquitous communications coverage.

Another key trend is the growing requirement for large chunks of bandwidths at the high end of the market. Using large antennas for large vessel with C- and Ku-Band to support up to

What executives are saying about the future of satellite maritime communications

"...The maritime satellite market is growing despite difficult economic conditions. The expanding demand for always-on, high-speed broadband connectivity will continue as vessels increasingly become extensions of land-based operations. Real-time, two-way communications is improving a vessel's operational efficiency from the bridge to the engine room, while keeping crew connected with friends and family. Additionally, the growing adoption of more sophisticated applications onboard that require more bandwidth is driving shipping companies to consider VSAT over other technologies, due to the cost advantages of always-on broadband connectivity compared to pay-per-use systems. The increased adoption and implementation of these types of applications will continue to drive higher usage of satellite technology over the next five years. ..."

-Christian Bergan, Director of Maritime Vertical, iDirect

"...Clearly, demand for broadband connections at sea is growing. This is being driven from numerous directions. In a world of iPhone, Blackberries, instant messaging, and Facebook, passengers and crew won't accept a complete lack of access to these communication tools. The competition among offshore broadband providers like Inmarsat and maritime VSAT services to meet these demands will continue to drive down the costs of satellite communications for larger vessel owners. Onboard entertainment, including satellite TV, broadband Internet, access to cell phones offshore using new technologies like picocells and femtocells that allow cell phone traffic to be carried over the internet will continue to grow in popularity..."

-Chris Watson, Director of Marketing Communications, KVH


"...In the coming years, among the key trends include the following:

Broadband communication at sea will become a MUST – more and more companies realize the many benefits of having always-on broadband connectivity on their ships. It shortens processes, saves money, increases profits and elevates the standards of living of the crew.

Flat monthly rate will become the favorable service plan – the amount of data received and transmitted by vessels will grow exponentially, leading users to migrate from expensive "pay per-use" plans towards flat fee service packs.

Global Ku-band Service will be widely available – global Ku-Band service has been the talk of the industry in recent years and lately service providers have begun investing heavily on enlarging their coverage areas by adding Ku-Band beams along popular shipping routes. We can expect that in a few years, global Ku-band coverage will become commonplace.

L-band solutions will continue to be used as fallback and emergency systems – solutions like Inmarsat or Iridium, will remain in use due to their simplicity and affordability and remain active mainly as emergency channels or fallback in areas without VSAT coverage.


Continued growth in the Oil and Gas industry – Orbit believes that the marine platforms for the oil and gas industry will continue to be a major driver for the growth of marine VSAT adoption. Interruption of communications means interruption of operations, leading to substantial loss..." 

-Moty Stoler, Marketing Director, Orbit Technologies



A Seatel antenna mounted on a work boat. (photo: Cobham Seatel)

250 watts power amplifiers. In addition to maritime demand, there are new maritime regulations which will increase demand. The International Maritime Organization which operates under the United Nations Charter, has mandated that by 2012 all sea vessels be required to have an electronic charting display information system to replace the paper charts used for navigation today. The electronic charting systems use satellite services to download up-to-date charts.

The demand for satellite services in the maritime industry is growing at a double-digit rate and demand is expected to continue in this range for the next several years both in the coastal vessels segment using small VSAT antennas as well as in the big transatlantic cargo and cruise ships to provide continuous broadband communications for the guests, workers and for vessel automation and logistics. 

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

Calendar of Events

August 2, 2010 **Third Annual SIA Army Commercial Satcom Users' Workshop** Tampa Convention Center, Tampa, Florida, USA, contact: Marie-Pierre Bloch, Director of Communications, SIA e-mail: mbloch@sia.org www.armysatcomworkshop.org/

August 30-September 2, 2010 **28th AIAA International Communications Satellite Systems Conference** Hilton Hotel, Anaheim, California, USA Tel: +1-703-264-7558 www.aiaa.org

September 6-9, 2010 **World Satellite Business Week 2010** Westin Paris, Paris, France Tel: +33-1-492375 30 e-mail: whitfield@euroconsult-ec.com www.satellite-business.com/

September 9-14, 2010 **IBC 2010** RAI Convention Center, Amsterdam, The Netherlands, Tel: +44 (0) 2078324100 www.ibc.org/

September 28-30, 2010 **7th Annual Satellite Interference Conference**, San Francisco, California, USA, Contact: Robert W. Ames Jr. President & CEO, SUIRG, Tel. +1-941-575-1277 e-mail: bobames@suirg.org http://suirg.org/2010_conference.shtml

October 5-7, 2010 **APSCC Broadcasting and Space Conference and Exhibition 2010** Tokyo, Japan Tel:+82 31 7836246 e-mail: info@apscc.or.kr www.apscc.or.kr

October 13-14, 2010 **SATCON 2010** Javits Convention Center, New York City, USA, Tel: +1 (203) 371-6322 email:info@jdevents.com www.satconexpo.com/

October 25-28, 2010 **CASBAA Convention 2010**, Grand Hyatt Hotel, Hong Kong, SAR, Tel:+ 852 2854 9913 e-mail:casbaa@casbaa.com www.casbaaconvention.com



Go to www.satellitemarkets.com for more up-to-date coverage, analysis and trends on the global satellite markets. View downloadable videos and listen to audio podcasts with satellite executives and industry analysts.

Euroconsult Maintains Positive Outlook on Satellite Industry Growth

Despite a limited market slowdown, the fixed satellite market reached a new high in revenues last year, according to Euroconsult's soon-to-be-released report "Satellite Communications & Broadcasting Markets Survey, Forecasts to 2019." The fixed satellite sector grew both in terms of transponder demand (+5.3%) and revenue reaching \$10.3 billion revenue in 2009. Euroconsult maintains a positive outlook for the future of the industry. Television broadcasting and emerging markets continue to be the primary growth drivers, with satellite broadband service ("BBS") systems contributing to growth as well.

"Operators' revenue grew in 2009 -- albeit at a slower pace than the previous year, -- due to sustained capacity demand in emerging markets" said Pacôme Revillon, CEO at Euroconsult. "This combined with an average operating margin for the industry that increased to 35% last year and a global fill rate of 77% underscores the good health of the satellite sector, and we forecast 6% revenue growth in 2010." Despite these positive results, growth last year was still somewhat constrained (especially compared to record revenue growth in 2008) due to modest capacity additions, high fill rates and the impact of the economic crisis.

CYCLE OF HIGH INVESTMENT FOR BOTH GLOBAL AND REGIONAL OPERATORS

Last year was a record year for satellite procurements by FSS operators, with over 30 new satellite orders. More than 30 operators have at least one satellite under procurement for either replacement or expansion.

The largest procurement campaigns are currently coming from industry leaders Intelsat, SES and Eutelsat with a total of 22 satellites ordered. However regional operators are trying to challenge this dominance. Last year capacity leased by the four leading operators totalled around 3,725 transponders, for a market share of 65% and a net increase of 150 transponders. By comparison, regional operators added approximately 300 transponders for a total of over 2,000 transponders leased -- increasing their market share from 33% to 35% in two years. Fast-growing regional operators such as Arabsat, Spacecom, RSCC, Star One and Singtel Optus benefited from the strong dynamics in their respective emerging satellite markets.

Many established and aspiring operators have been seeking financing for their new satellite projects, either to leverage the benefits of new satellite designs or to focus on certain vertical markets. With financing remaining a challenge for

"...Capacity usage on traditional satellites should continue to grow by at least 4% per year over the next ten years, with much faster growth expected in emerging markets compared to that of more mature markets..."

many but the most established operators, satellite companies will likely continue to rely on export credit agencies such as Coface in France and the Export-Import Bank in the United States, as they have done heavily over the last two years.

DIGITAL TV BROADCASTING REMAINS THE CORNERSTONE OF INDUSTRY GROWTH


The broadcast of TV channels continued to drive growth for satellite operators last year, representing roughly 42% of net additions in capacity usage and contributing to an estimated 50% or more of revenue increases.

Close to 27,000 channels were broadcast by satellite in 2009 with a net increase of approximately 3,000 channels last year. When excluding channels broadcast on proprietary systems of the TV companies DirecTV and Dish Network in the U.S., the fastest growing markets last year were Latin America, Central Europe, Russia, Central and Southern Asia (mostly India), with growth rates ranging from 9% to 17%.

The number of high definition TV channels worldwide more than doubled in 2009 to 1,913 HD channels (excluding local networks in the US). While 70% of HD channels broadcast are currently concentrated in the North American market, strong increases were reported in almost all markets.

PROSPECTS TO 2019

Euroconsult expects the global market value of capacity used for the traditional FSS market to reach around \$14.8 billion in 2019, or \$18.8 billion when including the wholesale market value of capacity used through emerging BBS systems dedicated to broadband traffic. This is an overall upward revision of our previous forecasts, resulting from a review of both capacity usage and prices.

Capacity usage on traditional satellites should continue to grow by at least 4% per year over the next ten years, with much faster growth expected in emerging markets compared to that of more mature markets. 

WTA Releases 2010 “Sizing the Teleport Market” Study


The World Teleport Association (WTA) published the highly anticipated update to its Sizing the Teleport Market study. Published every three years, the 2010 edition of this pioneering study reveals that since its first publication in 2004 the global teleport sector has seen commercial revenue growth of 50% (7% compound annual growth rate) while the number of teleports operated by commercial and broadcast companies has increased 20% to nearly 1,740. In the past three years, total commercial revenues grew 28%, while the total number of facilities operated by commercial and broadcast companies declined by 2%.



The 2010 edition of Sizing the Teleport Market distinguishes between teleports owned by commercial operators serving broadcast, enterprise and government customers, and those owned by broadcast, cable and DTH channels in 155 nations. WTA identified 655 companies operating 996 commercial teleports worldwide, with the balance operated by broadcasters. The transmission services revenues they produce equal 27% of total satellite transmission revenues worldwide. Commercial operators also spend 4.7 times more on commu-

nications and information technology equipment than broadcast teleports.

Net revenue (excluding resale of third-party satellite or fiber transmission capacity) has grown even faster than gross or total revenue for commercial operators. Worldwide, commercial operators saw a net revenue growth rate of 9% CAGR from 2004 to 2010, compared with 7% CAGR for gross revenues. “Teleports continue to grow in importance as a market channel for the world’s satellite operators,” said WTA Executive Director Robert Bell. “They are becoming more diverse in their use of transmission technology, mixing satellite with fiber and increasingly with wireless for last-mile services. And they are continually optimizing their ability to use bandwidth to deliver high-value services to customers.”

According to the report, Europe took first place for total commercial revenues in 2010, with North America coming in a close second. The strongest growth from 2004 to 2010, however, took place in Russia and the Newly Independent States (NIS), the Middle East, Latin America and Africa, where emerging market economies are leading the world in overall economic growth. 

In-Flight Broadband Investment to Reach US\$ 500 Million

In flight broadband investment should approach half a billion dollars by 2013, according to a report by In-Stat. The commitment that airlines are making to providing in-flight broadband has been remarkable. Total in-flight broadband equipment investment should approach half a billion dollars globally by 2013, reports In-Stat. In-flight Wi-Fi deployments have moved past the trial stage and are approaching critical mass with 2,000 airplanes to be deployed by the end of 2010.

"In-flight broadband service roll-outs by airlines is not without issues though," says Frank Dickson. "With current paid take rates for in-flight Wi-Fi service below 2 percent, providers have a lot of work to entice passengers to use the service. Significant investment has been made in on-board and on-ground infrastructure, and now the market will be tested as it tries to get more passengers to use the service."



broadband or live TV include Air Asia, Air AsiaX, Air Blue, Air Canada, Air France, AirTran, Alaska Airlines, American Airlines, British Airways, British Midlands Airways, Continental Airlines, Delta Air Lines, Frontier Airlines, Jazeera Airways, JetBlue, Kingfisher Airlines, Northwest, Oman Air, Qantas, Qatar Airways, Royal Jordanian, Ryanair, Shenzhen Airlines, Southwest, TAM Airlines, TAP Portugal, United Airlines, US Airways, Virgin America, and Wataniya Airways.

The research, "Build It and They Will Come? The In-Flight Broadband Market", examines the market for next generation in-flight entertainment (IFE). The emphasis is on market potential, usage, business models, and competitive analysis for the in-flight broadband market. Next generation IFE services are segmented by access technology (GSM, satellite, air-to-ground) as well as application (voice, video, and data).

Highlights of the findings by In-Stat include the following: In-Stat is anticipating service revenues of \$95 million in 2010. Airlines that have reported offering or testing in-flight

For more information go to: <http://www.the-infoshop.com/report/cg124497-in-flight-brband.html>



Gazprom Space Systems (formerly Gascom) – is a private commercial, non-governmental satellite operator based in Russia. The main shareholder is Gazprom, one of the largest energy companies in the world.



Gazprom Space Systems' orbital fleet consists of three mid-size satellites under the Yamal brand. The Yamal-100 and Yamal-201 satellites are co-located in 90E position. These satellites serve mainly the Russian/CIS market. The Yamal-202 satellite operating in 49E orbital slot has a wide service area covering most of the Eastern Hemisphere and caters to the international satellite market. The Yamal-300K, 401 and 402 satellites are under construction, while the Yamal-601 is in development.

Gazprom Space Systems' ground infrastructure consists of four teleports in the city of Moscow and in the surrounding Moscow region, which are connected to the main telecom backbones by means of fiber-optic lines. The company also has a wide network of earth stations across Russia.

In Russia, Gazprom Space Systems is not only a satellite operator but also a service provider and system integrator. Within Russia, along with satellite capacity, it provides satellite services including satellite links, video distribution, Internet access, network development and management.

Gazprom Space Systems has more than 200 clients in Russia and abroad. One fourth of Gazprom Space Systems' revenues come from the international markets.

By 2015 the company intends to increase its satellite capacity by 400 percent from current levels and to build a new teleport in the Moscow region. Currently, the new Yamal-300K and Yamal-401 and 402 satellites are under construction.

For more information go to www.gazprom-spacesystems.ru

(Advertisement)

Gazprom Space Systems Achieve Key Milestones

By Virgil Labrador

Russia-based satellite operator Gazprom Space Systems (GSS) announced last month financial results for the fiscal year 2009. GSS reported US\$ 71.8 million in revenues, 4 percent more in national currency than the previous year despite their satellites reaching full capacity two years ago. 2009 was the 10th anniversary of the launch of its first satellite- Yamal-100, which has been retired from service this summer. With increasing demand for its services, GSS have firmed up its expansion plans with three new satellites to be launched in the next three years. The aim, according to GSS' Deputy Director-General Igor Kot, is to provide coverage to the entire Eastern Hemisphere and implement a wide variety of

In an exclusive interview with Satellite Markets and Research, GSS' Deputy Director-General Igor Kot outlined the company's plans to expand its fleet and service offerings to meet the growing demand in Eastern Europe, the former CIS states, the Middle East, Africa and the Asia-Pacific region. GSS' current satellites are now fully booked, so it's planning to launch three more satellites in the next three years. The recent failure in May 2010 of the Express AM-1 satellite operated by the Russian Satellite Communications Company (RSCC) took up some more of GSS' capacity to ensure continued service to several customers of RSCC.

GSS plans to start its expansion with the launch of the Yamal-300K satellite next year. Following the launch of Yamal-300K, the Yamal-402 satellite is scheduled for a 2012 launch into the 55°E slot and the Yamal-401 satellite will be operating at the 90° E slot with a scheduled launch in 2013.

"GSS is a services-oriented company," said Kot. "In Russia we have a good complement of capabilities in both the

provision of satellite services as well as ground services including VSAT and TV network deployment," he added.

GSS' Yamal satellites currently carry over a hundred channels representing 30 percent of all TV channels distributed in Russia via satellites. The company is currently developing the market for VSAT services, with some 6,000 VSATs using the Yamal satellites as of 2009.

To further strengthen its ground communications capabilities, GSS intensified in 2009 building of a state-of-the-art Telecommunications Center in Schelkovo, Moscow region. Kot said that the new ground infrastructure will allow the company to widen the variety of telecommunication services they can offer which could be provided not only in Russia but also abroad.

GSS is particularly strong in vertical markets such as the oil and gas industry, with its key customer being its parent company- Gazprom, one of the largest energy conglomerates in the world. GSS is also carving a niche in



**Gazprom Space Systems
Deputy Director-General
Igor Kot**

aerospace monitoring services for Gazprom and other users.

With its success in the domestic Russian market, Gazprom Space Systems is aiming to expand its international activities. The company plans to substantially expand its geographic reach which now covers 50 countries worldwide. GSS also plans to increase its current revenues from the international sales by three times the current rate. The company will be stepping its sales and marketing activities in the next year in anticipation of the launch of its new satellites.

When the three new Yamal satellites become operational by the end of 2014, GSS will be providing coverage in most of the Eastern Hemisphere. It will be substantially increasing its capacity to meet growing demand in the regions they serve for a variety of services. "We are ready to meet the demands of the new markets," said Kot.



The View From the Top: Sweating the Assets Worldwide

by Robert Bell
Executive Director, World Teleport Association

The recession of 2009-2010 is not an equal-opportunity recession. In the industrialized nations of North America and Europe, some sectors are suffering terribly while others are relatively unscathed. The satellite and fiber transmission business, I'm glad to say, is in the latter category. But if you are looking for places where the recession has hardly made a dent, you need to look at the emerging markets.

According to *The Economist*, growth in the emerging economies of the world began to outpace the US and Europe in 2000, and remained positive even through the 2008-09 financial crisis. There are now 21,500 multinational corporations in emerging markets, and 70% of the world's economic growth in future years is likely to come from emerging economies, with China and India together contributing 40%. The number of BRIC (Brazil, Russia, India, China) companies on the *Financial Times 500* grew 4x from 2006 to 2008, from 15 to 62. The emerging markets' share of global GDP (at purchasing power parity) grew from 36% in 1980 to 45% in 2008 and is expected to reach 51% by 2014.

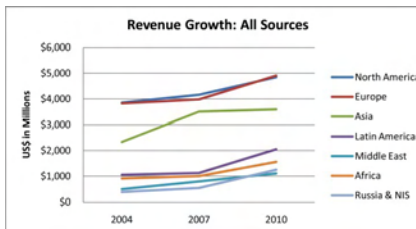
From my own little corner of the global economy, I can validate the trend. WTA just published its 2010 update of *Sizing the Teleport Market*, which provides the only market data on the teleport sector, from number of facilities to revenues, workforce and purchasing power. It is available free to our members and on a paid basis to others at www.worldteleport.org.

The global revenue figures within this specialized sector tell the same tale. In North America and Europe, industry revenues have grown at a compound annual growth rate (CAGR) of 4% since 2004. But with a global CAGR of 7%, where is the growth coming from? From Russia and the Newly Independent States, Latin America, the Middle East and Africa. None of those markets can compete with North America and Europe in sheer size but that is where the strongest growth is taking place.

What about Asia? The region enjoyed strong growth from 2004 to 2007 but growth flattened in the most recent three years. Aren't two of the most dynamic growing economies –

China and India – located in Asia?


They are indeed, but they are also places where the telecommunications market operates within tight restrictions. China is by far the fastest growing economy in the region, as well as its largest. But strict state control of telecommunications eliminates the entrepreneurship in telecom that has driven teleport growth in other nations. In India, the government restricts the ability of foreign satellite carriers to provide capacity, and capacity shortages are slowing the growth of DTH and other satellite businesses, while preserving the profits of domestic players, entrepreneurs and incumbents alike.



Teleport Revenues (Source : WTA)

North America and Asia actually saw a decline in the number of commercial teleports from 2007 to 2010, while the Middle East, Africa and Russia/NIS were flat. Only Latin America and Europe experienced growth in the number of commercial facilities in the past three years. (For the full six-year period from 2004, every region saw growth in facilities as well as revenues.)

The financial crisis that began in 2008 certainly had some effect, with its impact on the availability of risk capital. Another trend during the 2007-2010 period was industry consolidation, with bigger companies buying smaller ones and then rationalizing their assets by taking some facilities out of commission. As always, this trend was balanced by new entrepreneurial entrants to the business, who were in greatest evidence in Latin America and Europe and least active in North America – the region that gave birth to teleport entrepreneurship more than three decades ago.

In business, of course, it is not assets that count but the income they can produce. Over the period of the *Sizing* studies, teleport operators have clearly learned to "sweat their assets" in order to generate higher revenue from few facilities. Whatever the current direction of the business cycle, that is a winning strategy. 



Robert Bell is Executive Director of the World Teleport Association, which represents the world's most innovative teleport operators, carriers and technology providers in 20 nations. He can be reached at:

rbell@worldteleport.org

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CASBAA Convention 2010 to Focus on Digital Content Delivery

The CASBAA Convention 2010 to be held at the Grand Hyatt Hotel in Hong Kong on October 25th – 28th will be focusing on digital content delivery. This year's theme is "Unlock Your Networks" and it aims to connect the dots between Platforms, Channels, Technologies and Partnerships.

The four-day CASBAA Convention 2010 will gather operators, content providers, satellite services, technology, carriers and ad agencies together to further unlock the vast pay-TV potential across Asia.

Keynote addresses, In Conversation sessions and panel discussions, along with networking breakfasts, lunches and official receptions, combine to create Asia's most vibrant platform, connecting Channels, Platforms, Technology, Partnerships and building new networks.

To date 26 industry leaders have committed their support to the CASBAA Convention 2010 including ABS, Arianespace, AsiaSat, CNBC, Comcast, Discovery Networks Asia-Pacific, Disney Media Distribution, Eurodata TV, Eurosport, Fashion One, FRANCE 24, Globecast, HBO, Invest Hong Kong, MEASAT, MGM Channel, MTV Networks, NHK World, Paul Weiss, Playboy TV, RRsat, Synovate, Tiger Gate, Turner, Universal Networks Interna-

tional and Warner TV, along with more than 30 media partners and trade organizations.

This year's Convention presents a powerful program highlighting the critical issues shaping the Asian pay-TV industry. With digital media now centre stage, industry thought leaders from across the globe will discuss strategies



With content consumption via traditional broadcast, mobile device, internet and 3D platforms blurring the lines between TV, video and a new viewer experience, the Convention 2010 program presents a 360-degree review of the business synergies between carriers, advertising agencies, broadcasters and technology providers delivering current and next generation solutions in Asia.



The four-day CASBAA Convention 2010 will gather operators, content providers, satellite services, technology, carriers and ad agencies together to further unlock the vast pay-TV potential across Asia.

Meanwhile, more than a billion Asian pay-TV viewers demand 24x7, global and local news content. In this compelling session leading news providers will debate innovative strategies for further growing this big slice of the media pie.

for capitalizing on the latest market opportunities for subscription television and advertising revenues in Asia.

Asia's buoyant business environment has fostered increasing investment by countries keen to position themselves as the leading Asian media hub. Invited participants in a high-level discussion on the "Media Hub championship" include senior officials from Malaysia, Abu Dhabi, Singapore, India and Hong Kong.

CASBAA is expecting more than 1,000 delegates from around the world will be attending the convention.

For more program details and registration about the Convention 2010, go to: www.casbaaconvention.com



SatService's *satnms* LFRX/TX L-Band Fiber Optical Receiver/Transmitter

SatService, an equipment manufacturer and system integrator specializing in satellite ground systems solutions, developed the *sat-nms* L-Band optical transmitters and receivers for almost any applications for satellite ground stations, VSAT and cable networks.

Two types of optical converters are available: the *sat-nms* LFTX optical transmitter which converts from IF input spectrum to optical output at 1310nm; and the *sat-nms* LFRX optical receiver which regenerates the optical signal back to an IF spectrum.

SatService offer the LFTX/RX modules for different frequency bands.

- *sat-nms* LFTXL and LFRXB 950 to 2150MHz;
- *sat-nms* LFTXB and LFRXB 50 to 2150MHz;
- *sat-nms* LFTX10 and LFRX10 950 to 2150MHz and 10MHz reference frequency for BUC on same fiber.

The advanced solution offered by SatService is equipped with multiple remote M&C interfaces: webbrowser interface for the user, a local operator interfaces via LCD and keypad and SNMP. The baseline configuration includes redundant power supplies. So you do not have to add a second power supply as with competing products. As an optional feature hot swap capability which is given in any case for the optical transmitter and receiver PC boards can be extended to the power supplies.



optical links from the front panel in an easy way. An alarm log shows the last 20 alarm messages. Parallel to the local front panel control the M&C module includes an integrated web server with an Ethernet interface so that the operator can also monitor and control the optical links via its web browser - both locally or remote whenever he is connected to the same LAN.

A common configuration is a 4:1 sub-system for an antenna with 4 LNCs, with an additional redundant chain. But the modules can be delivered also in other configurations, even a 2 times 4:1 redundant configuration is possible. All modules include RF gain adjustment and extensive monitoring. The optical receiver 19" drawer also provides a LCD display and keyboard for local M&C. The remote M&C interface is via web browser, SNMP, HTTP GET functions and RS232 interface as in all other *sat-nms* products. If you order a redundant configuration the optical transmitter and receiver chassis communicates via LAN with each other. The *sat-nms* optical link receive and transmit modules fit also seamless into the *sat-nms* LSM switch matrix and add there optical interfaces instead of coaxial interfaces.



Special Configurations

SatService GmbH can also provide a special combination of fiber optical link combined with L-Band distributors. *sat-nms* LFRXv4 is a L-Band distributor which can be integrated in the fiber optical chassis. 4 or 8 fiber optical receivers in combination with the 1:4 L-Band distributor can be used in one 2HU 19" chassis. These are the high quality splitters also used in our *sat-nms* LRXD L-Band distributor. The overall unit is therefore a combination of an optical receiver and L-Band isolated splitter and provides 4 independent isolated L-Band outputs per optical Link in only 2 height units. This is especially helpful for customers which need a certain L-band IF distribution as well.

With the SatService solution you will get full local and remote monitoring & control capability of all your optical links. The 19" unit provides a LCD Display and a keyboard which allows the service personal to monitor & control the

For more information on this product go to www.satnms.com or contact SatService at phone +49 7738 97003 or e-mail at info@sat-service-gmbh.de

Back and Forth with Newcom International President Jaime Dickinson

In March 2010, Jaime Dickinson was named Teleport Executive of the Year by the World Teleport Association at its annual Teleport Awards for Excellence Luncheon. The president and COO of Newcom International boasted the industry's second-fastest growing teleport in 2009 and one of the most talented and motivated organizations in the industry. Jaime is a native of Peru, with a style that blends the quick mind of an entrepreneur and the discipline of a manager who must master engineering details. Like many senior leaders in the teleport industry, he is a breath of fresh air because of a wide range of interests. He seems to me a guy who trusts his instincts.

His launch within the satellite industry began with a successful venture called Vannamei, a satellite equipment distribution company. He sold it to American Tower where he worked briefly for the ill-fated Verestar venture. In 2004 he launched Newcom International and it was an immediate success. Today he oversees all operations at the Miami-based company, and is focused on expanding Newcom's global presence and building marketshare in countries that are rapidly developing their communications capabilities.

Industry insiders know that Newcom has emerged as a leading voice in the teleport industry. This was evidenced by Dickinson's recognition in March 2010 in Maryland (USA), when he received his award. I was pleased to be able to announce his award before the 200 leaders of teleports, satellite fleets and tech companies in the room. I have wanted to have a chat with him about a range of projects, including a digital inclusion project in Latin America, with iDirect's Evolution, product that was widely covered. I finally caught up with him last week. In this exchange, he discusses how satellites help bridge the digital divide. And he does not mince words with regard to channel conflict with satellite operators or about trends in the teleport industry. Excerpts of our exchange follows:

Lou Zacharilla (LZ): First of all congratulations again for being named the teleport industry's Teleport Executive of the Year. Did you celebrate when you got back to Miami in your world-

class restaurant, *La Cofradia*?

Jaime Dickinson (JD): Thank you, Lou. Of course we did. But you should know that I started celebrating in D.C.



Jaime Dickinson (right) and Lou Zacharilla (left) during the awarding of the Teleport Executive of the Year luncheon. (photo courtesy of WTA)

with friends and industry colleagues first, and then went back to Miami and continued the celebration at La Cofradia.

LZ: A restaurant that I look forward to visiting. Last month, the World Teleport Association issued its annual study of the teleport industry. To the surprise of some, it reported that Latin America and emerging economies had experienced greater CAGR – by a factor of 3% overall - than in the traditionally strong broadcast and communications markets in North America and Europe. How do you interpret those results?

JD: *Mainly as empirical evidence of something we all thought was happening: the rest of the world is playing "catch-up." We have an abundance of top quality telecom networks in the U.S. and Europe, which are very good and very advanced. South America, Africa and other developing countries are way behind, yet the needs of these markets grows. Our work in Colombia is a good example of what this market*

looks like. So it makes sense that the growth is from there. They need to invest to get to par with the U.S. and Europe and to begin to take advantage of global networks and the global economy.

LZ: What is mainly driving the demand?

JD: Part of it, interestingly enough, is the demand being created by international businesses from Europe. I've seen this in Africa, a continent we service and have done well in to close digital gaps. International firms from Belgium, France and other European countries have been going to these nations to build factories, create new ventures and are demanding better communications services. Of course, public institutions also need to fast-forward in order to keep up.

LZ: This may be what has kept our industry growing and stable, even during this nasty economic climate.

JD: As we have come to learn, economic expansion is enabled through robust, reliable communications. Communications can replace location as the critical factor in the enterprise sector's decision to locate to a place today. Short of a total meltdown in the global economy, this will continue for many, many years.

LZ: It's true. I like to say that we have "eliminated the middle of nowhere." Robust communications and plenty of bandwidth are like oxygen and, clearly, no economic development officer or political leader with any sense is going to allow opportunities to slip away by allowing the communications infrastructure to remain pre-historic. That seems clear.

JD: Yes it does. Newcom presses this point and finds a receptive audience. We have the advantage of having been born or lived in Latin America but with

a teleport and a hub in the United States.

LZ: Going back to the WTA study, it also reported that, overall, the number of teleports worldwide has shrunk. You run a teleport. Do you see this as part of a natural consolidation in a maturing market, or a more ominous trend based on purchasing requirements from the customer side of business?

JD: I think it has to do with consolidation. The major players have been acquiring teleport facilities to streamline operations. Therefore it makes economic sense to shut down some facilities. That is a function of a maturing business environment.

LZ: So you think it is a healthy sign. That's good. We do know that acquisition activities are continuing. Let's talk

"...The big players are trying to kill the small players, frankly, with no respect or sense of long-term relationships or the ethics that should normally protect client relationships and vendor loyalty..."

about recent events. Newcom provided availability for the World Cup out of South Africa. Aside from the fact that Argentina, the team I had my money on, got blown away in the end, we know that the event was good for the satellite community. From Newcom's perspective, were there any advances in technology or service from this year's World Cup that are notable?

JD: It is a great event, win or lose.

LZ: I'd rather win. It's an American thing. It sounds like Newcom did win.

JD: It went very well for us. We were able to provide capacity to transmit games throughout Africa, Europe and Latin America. We definitely saw advances in optimization technology. That helped a lot because there was a shortage of resources. Thanks to advances in bandwidth optimization tech-

nologies, we were able to expand our distribution capacity while utilizing fewer resources.

LZ: You mentioned capacity. That brings me to a somewhat sensitive subject regarding the folks in the sky. One issue that has been very much on the mind of your colleagues in the teleport industry is the "channel conflict" among the satellite operators and teleports. Does Newcom experience this conflict? What are the impacts?

JD: NewCom definitely experiences this. The impact is that there is no longer any loyalty. The big players are trying to kill the small players, frankly, with no respect or sense of long-term relationships or the ethics that should normally protect client relationships and vendor loyalty. The response to this impact is what you would expect.

Smaller players are looking elsewhere for service and for partners. To counter the problem, we (NewCom) quickly created relationships with Tier Two vendors that are focused on providing bandwidth sales instead of competing for customers. They allow us to offer very good pricing and compete with the Tier One operators. We have also focused on developing value-added services and providing turnkey solutions to our clients so that we aren't just bringing connectivity to the table.

LZ: You can innovate your way out of the conflict, which is always necessary. But is there a viable solution to channel conflict?

JD: I think the only way to resolve channel conflict in a substantive way is for satellite owners to go back to their core business of selling bandwidth. Certainly undermining an industry that feeds it substantial – very substantial – revenues is not a viable solution.

LZ: At least 25% of all operator revenues run through the accounts of teleports. The two groups are interdependent. To take the other side, it is a di-

lemma that may be coming from outside pressures. I wonder whether going back to the “core” business really means selling bandwidth, or if “core” is being redefined? In other words some operators – and I emphasize *some* – are managing large debt and have outside shareholder or financial pressures on them that may be driving a strategic adjustment in their business. They may think that being like a teleport operator is “core” to their business and that teleports, because they are not individually powerful enough, may simply need to go along.

JD: *As I say, operators need to carefully consider their core business proposition and the consequences of their actions over the long-term. The business cycle has not been outlawed and people have memories. We may be business people but the way we work is based on human relationships, trust and a need to work with partners who are on our side and who understand our businesses. When a company begins to change its dynamics and moves away from its core business and threatens our livelihood, bad things can happen to relationships. We saw this happen when the telecom sector crashed eight to ten years ago and I think it will happen to satellite operators if they are not careful.*

LZ: I believe there is a need for smaller teleport operators to form stronger collective alliances and to function more as a technology union. Not only to combat channel conflict but to concentrate on other ways to collectively leverage strength and build the industry. World Teleport Association initiated a series of member forums last year and learned that channel conflict is but one of several issues that impact businesses. In fact, the WTA is presently conducting a study of the impact of Ka-band on the business. Ka-band has a lot of people excited, especially as broadband consumption rates grow. What is your view on how Ka-band will impact the teleport business?

JD: *It will have a positive impact because Ka-band equipment is much less expensive than KU-band equipment and will allow us to provide mass distribution by going directly to individual households.*

LZ: Certainly the market trend is to provide more and more bandwidth, speed and broadband access to individual households, devices and remote places.

JD: *In Colombia, where we have been working to bring Internet connectivity to more than 1,000 rural communities nationwide, I see Ka-band as the next phase. I see us moving from Ku-band to Ka-band because, among other reasons, it will save significant money on equipment.*

LZ: When you accepted your Executive of the Year award you noted that your ardent belief is that the type of communications that the satellite industry provides is essential to education, economic development and stabilization in developing countries. To a large degree, this is a case of “doing well by doing good” and using Ka-band as a technology to make it happen. Do you believe that we as an industry can fulfill a moral mandate to connect communities that have no access and profit and allow them to participate in the “broadband economy?”

JD: *I believe this one-hundred percent. I mentioned our work in Colombia and there is a good case study out now which really details this.*

LZ: In that case study, you said that “connectivity has been like a walk on the moon” for many of these people.

JD: *We extended connections to a region where access was virtually non-existent.*


LZ: Colombia is an interesting place. It has dense mobile coverage today,

but as recently as 2005 had only 11 percent Internet access. Thanks to this project it is moving forward.

JD: *Thanks in large part to teleports and satellite. We (the staff at NewCom) come from those regions and we know that there is a lack of 21st century communications. It is the biggest problem developing countries face. So, yes, I do believe that it is our moral obligation to help provide education through telecom connectivity to rural areas in developing regions. We helped bring access to 650 schools, hospitals, farms, businesses, churches in remote communities in six months through a government and local ISP deal. I have definitely seen the positive social and economic impact.*

LZ: Governments have gotten the message, yes?

JD: *Many politicians have begun to see the positive effect and as a result they are championing massive and reliable communications networks in their countries. They see communications as the tool to bring business, education and economic growth. (They also see it as a way to get their message out to the people so they can win more votes!) We are now seeing this model duplicated in Africa. It is exciting to be in the middle of the communications revolution and, as you say, “eliminating the middle of nowhere.”*

LZ: And making it happen from a teleport in Miami where there is an award trophy to confirm all the hard work. Thanks, Jaime. 

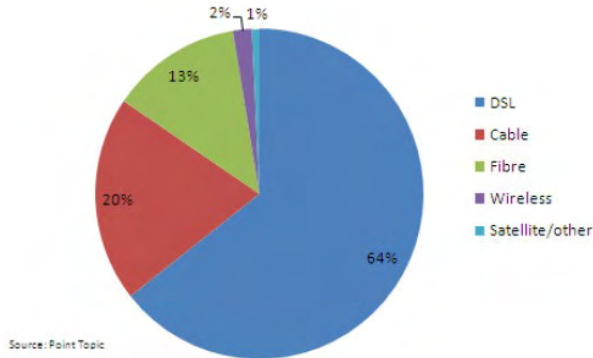
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Vital Statistics

Global Broadband Market Share by Technology (1Q-2010)



There are 484 million broadband subscribers worldwide as of the 1st quarter of 2010 according to the Broadband Forum. Of these number less than one percent get broadband from satellite with DSL getting the lion's share of 64 percent of the market.

Source: Broadband Forum (baseline data from Point Topic). 

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The Satellite Markets 25 Index™

| Company Name | Symbol | Price (Jul 30) | % Change from 2-Weeks Ago | 52-wk Range | % change from 52-wk High |
|--|----------|-------------------|------------------------------|-----------------|-----------------------------|
| Satellite Operators | | | | | |
| Asia Satellite | 1135.HK | 11.98 | 1.18% | 9.80 - 12.80 | ↓ 6.41% |
| Eutelsat Communications | ETL.PA | 28.34 | 2.94% | 17.89 - 29.23 | ↓ 3.03% |
| Hughes Communications Inc. | HUGH | 25.08 | 1.33% | 21.19 - 31.52 | ↓ 20.43% |
| Inmarsat | ISAT.L | 737.00 | 3.08% | 491.00 - 831.00 | ↓ 11.31% |
| SES Global FDR | SES.F | 17.88 | 3.35% | 13.11 - 19.01 | ↓ 5.92% |
| Satellite and Component Manufacturers | | | | | |
| Boeing Company (The) | BA | 68.14 | 7.14% | 42.51 - 76.00 | ↓ 10.34% |
| COM DEV International | CDV.TO | 2.09 | 6.09% | 1.78 - 4.15 | ↓ 49.64% |
| Lockheed Martin Corporation Com | LMT | 75.15 | 0.41% | 67.39 - 87.18 | ↓ 13.80% |
| Loral Space and Communications | LORL | 47.84 | 10.13% | 19.27 - 50.58 | ↓ 5.42% |
| Orbital Sciences Corporation Co | ORB | 14.64 | -7.22% | 12.38 - 19.63 | ↓ 25.42% |
| Ground Equipment Manufacturers | | | | | |
| C-COM Satellite Systems Inc. | CMLV | 0.2950 | 3.51% | 0.26 - 0.36 | ↓ 18.06% |
| Comtech Telecommunications Corp. | CMTL | 21.57 | -28.69% | 20.50 - 38.39 | ↓ 43.81% |
| CPI International, Inc. | CPII | 14.07 | -10.27% | 8.93 - 16.20 | ↓ 13.15% |
| EMS Technologies, Inc. | ELMG | 16.64 | 11.01% | 12.00 - 22.45 | ↓ 25.88% |
| ViaSat, Inc. | VSAT | 36.14 | 9.18% | 23.53 - 38.19 | ↓ 5.37% |
| Satellite Service Providers | | | | | |
| Gilat Satellite Networks Ltd. | GILT | 5.28 | 15.79% | 3.95 - 6.25 | ↓ 15.52% |
| Globecom Systems Inc. | GCOM | 8.23 | 1.98% | 6.36 - 8.99 | ↓ 8.45% |
| International Datacasting | IDC.TO | 0.2550 | -5.56% | 0.22 - 0.34 | ↓ 25.00% |
| ORBCOMM Inc. | ORBC | 1.88 | 4.44% | 1.64 - 3.23 | ↓ 41.80% |
| RRSat Global Communications Net | RRST | 8.70 | -1.14% | 8.28 - 13.21 | ↓ 34.14% |
| Consumer Satellite Services | | | | | |
| British Sky Ads | BSYBY.PK | 44.89 | 6.98% | 30.54 - 45.25 | ↑ 14.90% |
| DIRECTV | DTV | 37.16 | 8.53% | 23.50 - 39.87 | ↓ 6.80% |
| DISH Network Corporation | DISH | 20.08 | 8.83% | 15.67 - 24.16 | ↓ 16.89% |
| Globalstar, Inc. | GSAT | 1.76 | 6.67% | 0.61 - 2.11 | ↓ 16.59% |
| Sirius XM Radio Inc. | SIRI | 1.03 | 5.10% | 0.42 - 1.25 | ↓ 17.60% |

The Satellite Markets 25 Index™ is a composite of 25 publicly-traded satellite companies worldwide with five companies representing each major market segment of the industry: satellite operators; satellite and component manufacturers; ground equipment manufacturers; satellite service providers and consumer satellite services. The base data for the Satellite Market Index is January 2, 2008--the first day of operation for Satellite Market and Research. The Index equals 1,000. The Satellite Market Index™ pro-

| INDEX | Index Value (June 30) | % Change 2 Weeks Ago | % Change Jan. 2010 | % Change Jan. 2008 |
|-----------------------------|--------------------------|-------------------------|-----------------------|-----------------------|
| Satellite Markets 25 Index™ | 1146.1 | -1.75% | +16.29% | +11.16% |
| S & P 500 | 1101.60 | + 2.09% | - 3.53% | -23.60% |

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