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SATELLITE Markets & Research

Industry Trends, News Analysis, Market Intelligence and Opportunities

Broadband Maritime Stirs Spirited Debate

by Elisabeth Tweedie, Associate Editor

The maritime market for satellite services is one of the fastest growing segments of the industry. Euroconsult has forecasted that the number of satellite communications terminals in the global maritime market will nearly double over the next de-cade, with a compounded annual growth rate (CAGR) of seven percent over the 10-year period.

In what was often a spirited and at times even cantankerous debate, the key topic that emerged from the GVF Conference on Broadband Maritime held last month in London was not the market size nor the relative merits of the different technologies although these were covered; rather it was the importance of the human element. This meant crew welfare but also very clearly the need for better communication and understanding between the system vendors and the users.

Presentations from both Demetris Makaritis, Fleet Manager, Navigator Gas and Kaushik Roy, DPA and Company Security Officer MOL LNG and the accompanying comments from the floor demonstrated this lack of communication very clearly. Demetris saying very unambiguously that he would happily pay more for bandwidth as long as the service is available and working. His experience to date has been that VSAT is neither, with one vessel reporting 60% down time in March and April. Kaushik said that the VSAT service was unreliable but that he had kept Fleet Broadband as a backup. However he complained that he couldn't get through to the ship if the crew were using all the capacity for downloading books or movies. Obviously no one had explained traffic prioritization to MOL LNG and there was no one on the staff with that knowledge.

There are approximately 9,000 commercial ship owners (excluding fisheries and leisure) of these 4,500 own only one ship. But Navigator Gas and MOL LNG are not small one man band operators, Navigator Gas owns and operates a current fleet of 12 modern 20,500-22,000 cubic meter semi-refrigerated gas carriers and MOL LNG is part of Mitsui OSK Lines which operate 910 vessels. MOL LNG itself is involved in 25% of the world's Liquid Natural Gas (LNG) transportation.

Questions from the floor indicated that in Navigator Gas' case the particular antenna being used was probably inadequate for the required service. If that kind of miscommunication can arise between major operators and the service providers imagine how bad the situation could get with a small operator who would be even less likely to have the resources to devote to understanding Satcoms.

Tellingly one participant asked why the radio officer who would presumably have a greater understanding of the technical requirements was not involved in the buying process. Kuba Szymanski of Intermanager pointed out that the post of Radio Officer had ceased to exist many years ago as computers replaced wireless on board ship.

So we have Satcoms providers who in many – but not all – cases don't know enough about the market they are selling into and buyers with little or no knowledge of telecommunications who therefore

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X-Band		●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Ku-Band			●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
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From the Editor

Carrier ID to Debut at London Olympics

Most of us who are not fortunate enough to cover the Olympics this month in London will be watching the games which promises to dazzle with new technologies like 3D, the new mobile technologies and social media, which will all be highlighted during the games.

But there is one major technological breakthrough that will debut at the Olympics that most viewers won't see but will have a significant impact on the industry. Eutelsat announced that it will be requiring Carrier ID on transmissions to its satellites covering the London Olympic games. Eutelsat will be using Newtec's new M6100 modulator which features Carrier ID capability. This was hailed as a significant milestone by industry groups towards addressing a long-term solution to the problem of interference.

At least eight equipment manufacturers including Newtec and Comtech EF Data have incorporated some form of Carrier ID technology in the products. The major satellite operators such as Intelsat, SES and Eutelsat have been working with industry groups such sIRG and equipment manufacturers to facilitate testing of Carrier ID. In addition to Eutelsat, satellite operators such as Intelsat and SES as well as Satellite Newsgathering (SNG) provider SIS Live will be using Carrier ID equipment during the London Olympics.

"In the entire history of the satellite industry, this is the first time we have seen every sector come together in solving a problem that has plagued the industry for a long time," said David Hartshorn, Secretary-General of the GVF. "This is an important first step in a multi-step process," said Martin Coleman, Executive Director of sIRG. Coleman said the next step is to adopt a common standard for Carrier ID technology.

Virgil Labrador

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The Broadband Maritime Market... From page 1

don't know the right questions to ask to get the service they need. Hardly a recipe to successfully grow a market! The buyers need education which is not currently being provided by the Maritime Academies. Warsash Maritime Academy for example spends 6-12 months training students how to use a sextant – an instrument developed for navigation 4,000 years ago and still regulation on board equipment but only used in extremis, but no time at all on VSAT operation.

Richard Roithner of Euroconsult pointed out that on average telecoms represented less than 1% of the operating expenses of a ship so it's not likely to be an area that will command much of the training budget. Given that situation the vendors have two choices: wait, and continue to get bad publicity from customers who have been sold systems that don't meet their needs, or provide that education. Equally the vendors need to understand more about the market they are trying to grow – maybe they should seek out and recruit some of those retired Radio Officers!

Unsurprisingly the maritime industry like the most of the rest of the world has been impacted by the economic crises and across the board cost cutting is taking place although not so much in telecoms according to Roithner. Roger Adamson of Stark Moore Macmillan a marketing and communications company with a maritime division gave a different perspective when he mentioned that the average monthly spend on VSAT communications is currently US$2.6K compared to US$3.5K a year ago. Some of this can be accounted for by VSATs being installed on smaller vessels, but it's unlikely that this will account for the entire decrease. He stated that ship owners are in crisis mode and their focus is not on satcoms "unless it is clearly seen to provide savings and efficiency gains (crewing, ops, IT and commercial)". A point that was repeated by several other presenters.

Ship owners and managers need to be able to see the ***tangible quantifiable*** benefits of broadband communication.

Crew welfare was a recurring theme. All agreed that it was an important area but one that is difficult to quantify except in terms of the extra bandwidth it consumes. According to data from Roger ships using L-Band on average use 70MB a month compared to ships with VSATs who on average consume 20GB. However the average monthly spend on L-Band communications is US$1,051, so clearly VSAT offers value for money if the extra bandwidth used can be cost justified.

Mark Woodhead Managing Director of Headland Media a company that provides daily newspapers, entertainment, training and email software to Merchant Shipping, Cruise Ships Mega-Yachts and oil rigs stated that mariners would prefer to sign a nine month contract on a ship that provides broadband internet to a six month one on a ship without that facility. Following the ITF Seafarers Trust Survey conducted in 2010 which showed that 80% of mariners had no access to the Web and only 20% of mariners had access to private email with a further ~15% having access to email but without private access, Mark had recently conducted a survey with Mariners to find out what they wanted in terms of communication. By far the highest demand was for Skype to stay in touch with family and friends, followed by private email with attachments and Facebook and videos. After that professional development becomes important: chart updates, regulations, research etc.

Kuba wrapped up the conference with a very feisty presentation, hurling questions about the shipping industry to participants to demonstrate that the service providers didn't know enough about the market they were selling into and complaining that VSATs had been sold on the basis of being as reliable as L-Band, but without providing any Service Level Agreements (SLAs) to support this. Orange Business Services is one company that has already responded to this complaint and is offering a 99.95% end-to-end SLA for its system to the maritime industry. However as would be expected this is a high end solution and is likely to be out of range of many of the ship operators.

Kuba asked for the Service Providers to provide a Return on Investment (RoI) for VSATs as this was needed to justify the investment, particularly in crew welfare, and Ship Managers just don't have that information.

Very few people in this day and age would deny the importance of giving mariners access to the web to keep in touch with family and friends and enjoy the same access to entertainment, news and information that most of the developed world takes for granted. However for a ship operator working in crisis mode, as long as crew are still available providing this service is not going to be a priority unless, as Kuba asked, quantifiable benefits can be shown. For that to happen much greater communication and cooperation would need to take place between the two parties than is apparently happening at present.

Elisabeth Tweedie 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: etweedie@definitivedirection.com

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The Satcom on the Move Market

by B.H. Schneiderman

There are three types of antennas for mobile applications: Flyaways; Auto Deploy and Communications on the Move (COTM). These antennas operate in C-, Ku-, Ka– and X-Band frequencies and are used by commercial, government, military and broadcast sectors. The introduction of new Ka-Band systems provide a unique opportunity for satellite antenna manufacturers for satcom on the move applications.

To shed light on the trends in the satcom on the move market, *Satellite Executive Briefing* invited several key executives from some of the leading companies in the field. We asked to share their views in a roundtable discussion on this important market. Participating in the roundtable discussion are **Keith Buckley**, President and CEO of **ASC Signal**, **Drew Klein,** Director – International Business Development, **C-COM Satellite Systems**, **Tim Shroyer,** Chief Technology Officer, **General Dynamics SATCOM Technologies** and **Dwight Hunsicker**, Vice President Government Solutions, **Globecomm Systems.** Follows are excerpts of the exchange:

Satellite Markets (SM) *:How do you see the market for your mobile satellite antenna product lines in the next few years?*

Keith Buckley,ASC Signal: Most of our mobile products, like our 2.4m Nomadic and our line of trailered Trifolds (3.7m – 4.6m), are in high demand, and we expect the demand to continue. Since we focus on all frequency bands, multi-band feeds and low-PIM applications for all of our mobile products, our customers continuously find new applications for using these antennas. We have also developed many Commercial Off-the-Shelf (COTS) products, so defense departments in various countries have come to us for support with quick deployment and on programs with quick turnaround

Drew Klein, C-COM: The market is expected to grow not just for the next 1-5 years, but according to some analysts, the mobile VSAT units in service is likely to experience significant growth for the next decade. NSR projects more than a doubling of in-field mobile units, from land to sea to air. All mobile applications and all verticals (Oil & Gas, SNG, Emergency Communications, Disaster Recovery, Government, Military, Telecom) are candidates for strong increases in the future, with the potential to see explosive, exponential growth depending on the circumstances, be they manmade or natural.

Tim Shroyer, GD Satcom: Technologies has seen a steady increase in the demand for satellite communications terminals supporting those types of applications over the last

few years and we expect demand to continue to increase because we are developing products that meet highly refined user requirements generated by evolving satellite standards.

We consider those applications to fall into two separate market segments that we define as "Transportable" and "Satcom-On-the-Move." The transportable market segment includes a number of variants of terminal requirements for satellite communications that are satisfied by terminals that are able to be quickly and easily transported to user locations where they can establish communications links. In the commercial communications world, these terminals are used for applications like news gathering, oil exploration communications and disaster recovery. In the military/government communications world, these terminals are used for 'reach back,' tactical in-theater communications and logistics support.

With new, higher capacity, Ka-band spot beam satellites now being deployed in most world regions we have seen an increase in demand for transportable and mobile Ka-Band terminals which we expect to accelerate.

Dwight Hunsicker, Globecomm: Although there have been few major "program-of-record" type DoD procurements within the past year or so for transportable/flyaway SATCOM terminal equipment, we continue to see sporadic requirements for terminals that transmit / receive data rates in the 1-4 Mbps realm which is well beyond what is available through Mobile Satellite Systems (MSS) solutions. The trend for auto-acquiring systems, especially at Ku-Band, remains strong given ease of set-up and operation. The full deployment of the WGS constellation has spurred requirements for X- and military Ka-Band as well. The DoD and broader US Federal budget contraction will create two market demands, one being sustainment and upgrade of existing systems and the second being to make do with less in terms of quantities and capabilities.

Dwight Hunsicker

SM: *Do you have any new products that you are planning to introduce this year or in the next year ?*

Keith Buckley, ASC Signal: Our recently-released 2.4m Nomadic is a great example of the innovative products ASC Signal has been releasing to the marketplace. With its lightweight, carbon-fiber construction, low-investment cost, very low ongoing operations cost and easy, cost-effective expandability, the 2.4m antenna is a highly-flexible product that meets both commercial and defense sector requirements well. We designed it to integrate seamlessly with our Next Generation Controller satellite antenna controller system to make it the most accurate deployment and tracking antenna in its class. Coupled with the fact that it operates at L-, S-, X-, C-, K-, Ku-, Ka-, Q- and V-bands, including low-PIM, meets milspec standards, and is DISA and ARSTRAT certifiable, it is already proving to be a very valuable and successful product.

Keith Buckley

Drew Klein, C-COM: Yes, C-COM will continue to cater for the emerging Ka-Band services around the globe. Our goal is to have the new generation products of auto-deploy mobile antennas approved by all the major satellite service providers and operators by the end of Q2 2012. The Ka 75cm (Ka-75V) and 98cm (Ka-98G, Ka-98G) Drive-Away antennas have just completed approvals with different Ka-Band service providers. The antennas will be in full production this year. C-COM will be introducing 2 new Flyaway antennas in the coming year: one sub 1m aimed for the Ka based services and one 1.8m for the Ku and C-band based applications. At the same time, a new Glonass-based automatic controller unit for Russian customers has been produced and sold, and the GUI interface on the 7000 ACU has been adapted to accommodate languages from Chinese, Spanish, Arabic, and many others. C-COM has also completed all beta testing and is nearing the end of the first production run of the new 1.2m Drive-away (1201) and the new Airline Checkable Flyaway (ACFLY-1200).

Drew Klein

Tim Shroyer, GD Satcom: General Dynamics has broad product line aimed at exactly those specific market segments, on all satellite operating-frequency bands from C -Band through Ka-Band, including civil and government satellite bands. We were actually the company that initiated the entire concept of broadband Satcom-On-the-Move (SOTM) when we introduced Ku-Band Satcom-On-the-Move (SOTM) terminals more than five years ago. Subsequently we have refined those products to increase the available bandwidth with those terminals as well as reducing the weight and cost – making them suitable for more airborne, land and sea-based platforms. For those mobile broadband satcom requirements that cannot support the cost of a full SOTM terminal, we have developed an "At-The-Quick-Halt" (ATQH) terminal that is small and light weight, can be installed on vehicles permanently or in a removable case, and that immediately peaks the

Tim Shroyer

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Dwight Hunsicker, Globecomm: Globecomm's policy is to not release product data in advance, but only upon formal commercial release.

***SM**: What regions in the world do you see any opportunities for growth?*

Keith Buckley, ASC Signal: We anticipate the application of the new 2.4m Nomadic antenna to be worldwide, with specific interest in Asia, where we see both defense and commercial requirements.

ASC Signal's 3.9m Ka-band Trifold® is a Transportable Satellite Antenna System, designed for use worldwide in various applications, serving data, voice and communication networks.

Drew Klein, C-COM: We see big activities and demands coming from countries in the far-East including Japan, China, India and Russia. We expect more demands to surface from developing countries in Middle-East and Africa. South America is still slow for us but with World Cup and other international events happening in Brazil, we expect to see more activities coming from Latin America. If Oil prices remain high for the coming decade, then increased demand for communications in the O&G patch is expected

C-Com antenna used in SNG application in China.

Tim Shroyer, GD Satcom: We have seen continued growth in the need for mobile antennas worldwide. Demand tends to be driven by specific user requirements for military users as well as emerging commercial programs. Since a new generation of high-power satellites has recently been deployed over the United States and Europe, we have seen the strongest demand for mobile and transportable terminals in those areas. We expect that trend to continue as new high-power satellites are deployed.

***SM -** How do you see the growth in Ka-Band systems for mobile satellite antennas (both Flyaway, SNG , Transportable and Com on the move)?*

Keith Buckley, ASC Signal: Ka-Band is growing steadily in the mobile sector. Initially driven by the needs of the defense segment, there has been expansion as more Ka-band satellites and networks are launched. While Ka-band has limitations not seen in other mobile systems, it also has benefits due to features like spot beams and high-throughput.

Drew Klein, C-COM: Ka-Band is one of the hot markets which we aim to target over the next several years. With the advantages of offering higher data speeds at lower cost than other bands, we estimate that bandwidth hungry applications will quickly embrace this new technology. Prime candidates for this market are the SNG, Military and Oil & Gas Exploration.

Tim Shroyer, GD Satcom: Ka-Band high-power spot beam satellites have provided a new capability to provide ever-higher data rates to transportable and mobile users wherever the satellites have been deployed. As high-power Ka -Band becomes more widespread there will likely be more interest a mobile or transportable satellite service on these new Ka-Band satellites. General Dynamics was in Ka-Band from the begin-

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General Dynamics Satcom's vehicle-mounted Antenna

ning, having built the ACTS TT&C terminal and many of the VSAT terminals used for ACTS propagation testing. We anticipate significant mobile and transportable Ka-band the growth over the next 5 years, but the pace of user terminal installation is likely to be driven by the timing of available new Ka-Band capacity. When greater coverage areas are supported, we expect user terminal demand to increase.

Dwight Hunsicker, Globecomm: We expect to see and participate in the advent of new terminals that support the high-capacity Ka-Band satellites that are nearing launch/ commercial service. These satellites provide for significant bandwidth availability and terminals are requisite piece of the overall solution. These new terminals will support existing applications of VoIP, data, and video as the Ku-and X–Band systems currently do, but we can foresee the advent of new mission-specific systems that take advantage of the unique characteristics of high-capacity Ka satellites and its associated RF interface.

SM: *Any specific segment of the market ie. Broadcast, Security, Defense, Disaster Recovery, Oil & Gas and others where you growth?*

Keith Buckley, ASC Signal: For ASC Signal, we have seen tremendous growth in broadcast, consumer broadband and defense. The systems we have developed for consumer/broadcast applications have been deployed in identical configurations for defense applications, and the systems we have built for defense applications are now being used for commercial applications. Our product line will continue to offer this flexibility, providing customers with interchangeable capabilities.

Drew Klein C-COM: We see biggest growth in the following sectors: Satellite News Gathering (SNG) applications, Disaster Recovery and Oil & Gas Exploration and Mining. Cellular Backhaul by mobile operators and telecom companies should also prove to be a significantly strong vertical.

Globecomm's 1m/1.2m LT (Lightweight) Auto-Explorer Multimedia Transportable Satellite Communications Terminal

Tim Shroyer, GD Satcom: As with all satellite communications systems, market demand is driven by the acceptability of the cost of the services needed. Some users, with the military as an example, are driven by the availability of service itself more than just the cost. Others, like the broadcast industry, are mostly cost driven and find alternative technology approaches acceptable.

General Dynamics SATCOM Technologies' approach is to provide a wide range of antenna and terminal product options and to work with our customers to optimize our offerings to meet specific requirements. We expect to continue to follow that approach and support new requirements as they emerge in all of the potential market segments.

Dwight Hunsicker, Globecomm: We expect to see growth in each of these vertical markets , albeit for different reasons. As mentioned above, the provisioning of Ka band SATCOM will provide for unique hardware offerings within each of these markets. Integrating information security capabilities and attributes directly into the terminals will provide for some growth within the Defense market.

SM: *Any other comments you would like to add on the opportunities in the satcom on the move market?*

Drew Klein C-COM: Reports for Oil & Gas companies and the Mining industry are expecting these sectors to continue to grow over the next 5 to 10 years which would only mean more demands to stay connected in the field and remote regions which is only covered by satellites. With continued product development and enhancement, C-COM is optimistic that such demands will translate into significant growth and increased revenues over the coming decade.

Tim Shroyer, GD Satcom: General Dynamics SATCOM Technologies produces a wide variety of satellite communications earth terminal antennas, electronics, and full terminal systems. Our success has been based on

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supporting the whole range of potential users rather than concentrating on one satcom market requirement or niche. We see this as a very natural progression of the satellite communications marketplace.

If there was one "optimal" satcom solution, the market would have migrated in that direction. The fact that the market continues to be so broad, still including a range of systems supporting everything from credit card verification of just a few bits at a time to links over 100 MBPS in capacity shows the great diversity of capabilities that can be brought to bear when such services make economic sense. Ka-Band, with fixed, transportable and mobile user terminals is but another aspect of the significant satcom potential. Ka-band will satisfy some requirements well, but others will continue to be supported by existing C, Ku-Band, DBS and other systems. High-power Ka-Band satellites are designed for spot beam operation and are not suited to broadcast applications, for example, so they will not replace the efficiency of a single transponder that can be seen over an entire hemisphere or an entire programming coverage area.

"...With new, higher capacity, Ka-band spot beam satellites now being deployed in most world regions we have seen an increase in demand for transportable and mobile Ka-Band terminals which we expect to accelerate..."

—Tim Shroyer, GD Satcom

General Dynamics SATCOM Technologies welcomes the functionality these new satellites make possible, and we are ready today with terminals to satisfy the next generation of user requirements, whatever they turn out to be.

Dwight Hunsicker, Globecomm- Regarding communications-on-the-move, Globecomm views three distinct markets: land, maritime and airborne. Globecomm entered the Maritime market just over two years ago, and now provides MSS and broadband Ku-band-based services to over 3000 commercial vessels on a global basis. Given technology price points and DoD procurement planning, Globecomm, to date, has opted out of the land mobile aspect of the market. We see significant growth in the aeronautical sector within the Government / Military market as additional "eyes in the sky" replace "boots on the ground" as well as the need / desire for broadband connectivity of personnel during transit times.

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

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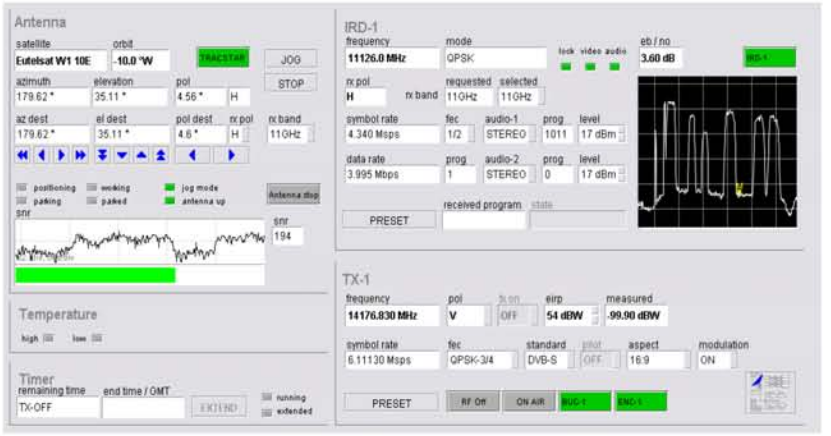
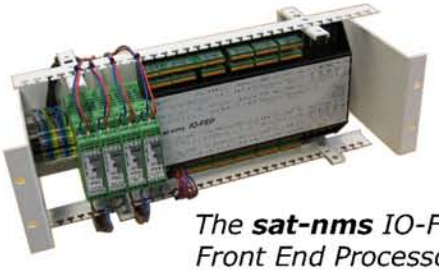


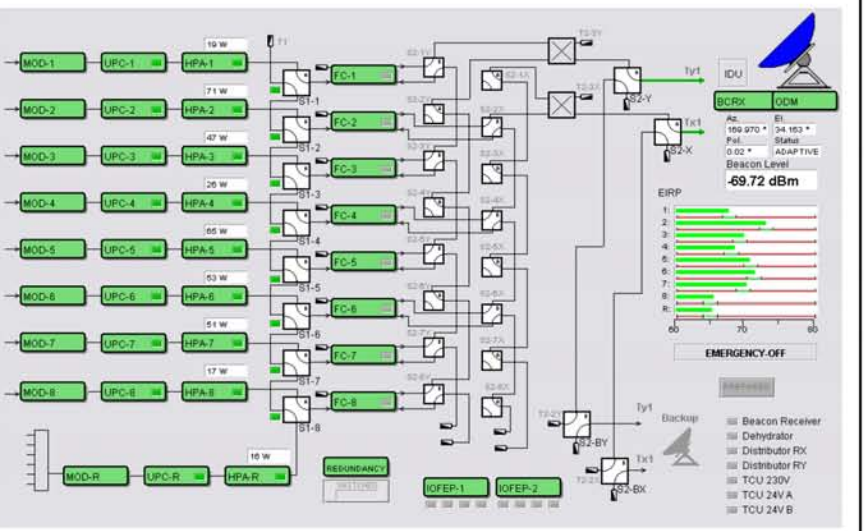
- No annoying software changes
- No time wasting re-compilation
- No expensive development system

- ✓ **YES** to easy configuration
- ✓ **YES** to operator friendly GUIs
- ✓ **YES** to smart work flows

User friendly plug-and-play interfacing to contact closures, waveguide switches, temperature sensors etc...



*The **sat-nms** IO-FEP Front End Processor:*



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In Satellite Contracts, What You Don't Know Can Hurt You

by Robert Bell

Satellite capacity is a uniquely valuable asset. It can do some things, like broadcasting one signal to millions of destinations, better and cheaper than any other technology. But it is also a scarce asset, thanks to the laws of physics and the skilled yield management of the operators that fly spacecraft in Earth orbit.

In 2011, the members of World Teleport Association shared with us in confidence the amount of money they spend on satellite capacity. The average teleport operator spends an amount equal to 47% of revenue – in effect, turning over half of its annual income to the provider of transmission capacity in the sky. Spending on terrestrial capacity doesn't even come close.

That is why, on June 13, we published a report titled *Best Practices in Satellite Capacity Contracts*. It focuses on the actual terms of capacity contracts that can create potential harm or advantage for the service provider, from ramp ups to termination clauses, portability to usage and resale rights. It may not be a thrilling read to take on your summer holiday, but it offers valuable insights culled from interviews with teleport executives who know the contracting process inside and out.

What are the biggest potential traps to avoid when you sign a contract for satellite capacity? They range from everybody's top-of-mind concerns to subtle nuances in wording.

Lease Term. Anything in the contract that doesn't line up with your customer contract represents a risk to your business. "The conditions that cause us the most concern in satellite capacity contracts," one teleport operator told us, "are firm, fixed end dates without respect to who the end user is and what their service is. Sometimes our customer may only ask for one to two years, while the satellite operator is asking for 7 years. We should be able to match the same terms as our customer requests."

Interference. Your transponder may not suffer interference from cross-pol or adjacent carrier interference today, but what about five years into the contract? Will you have the right to move or end the service if interference becomes so bad that, in your judgment, you can no longer use your capacity?

Resale Rights. Some contracts place restrictions on the teleport operator's ability to resell.

capacity. It is understandable that satellite operators want protection from competition from their own customers. But some restrictions can severely limit the service provider's options. A teleport operator with long-term leases and major media customers said that, "We want the ability to resell and use the capacity for video, data, or whatever we want, with or without value-added services. Reducing the risk as a wholesale buyer, by being able to resell, is my main request."

Liability and Indemnification. Most contracts require the buyer to indemnify the operator against damage due to an act or omission of the buyer. The buyer may also be required to indemnify the operator against claims or damages by third parties. Some teleport operators find these uncapped liabilities to be their single largest concern. "Normally the satellite operators impose liabilities on the contract, uncapped liabilities as a start," said one executive. "We don't want to sign up to unlimited liabilities. That is the most difficult issue to negotiate, and is very important as far as risk management is concerned."

Buyers may not always be able to get the terms they want. That's a matter of negotiating leverage, which comes down to how much you are buying, in what market, for what purpose, and who you (or your customer) are. Above all else, our experts stressed the need for clarity. Buyers need to make sure their operations and their customer's expectations are aligned with what the satellite operator can actually deliver in both best and worst-case situations. And they can only do that if the contract spells it out in detail.

Best Practices in Satellite Capacity Contracts is available free to members of WTA and for purchase from www.worldteleport.org.

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

The GVF Maritime Insights Agenda: Next Stop Singapore

by Martin Jarrold

In my contribution to the previous edition of ***Satellite Executive Briefing*** I wrote of the maritime communications environment being fairly characterized as "highly dynamic". Indeed, this very dynamism was well demonstrated at the **"Maritime Insights Europe 2012: Expanding Communications with Fixed & Mobile Networking Solutions to Further Horizons"** conference, which took place in London on 27th and 28th June, and about which I also wrote in that earlier column.

The success of this event, the latest in a conference series created by the **GVF-EMP Conference Partnership** – and more recently produced in collaboration with InterManager, the international ship management association – fully reflected the growth in maritime satellite broadband business as shown in the increasing numbers of ESV (Earth Stations on Vessels) supply contracts, many of which extend to fleet -wide installations. Various facets of the London conference program provided ample illustration of the deployment of VSAT systems – working in different parts of the frequency spectrum and using smaller antennas – and services – employing least-cost routing solutions – designed to support a myriad of maritime applications: for fleet, vessel, and cargo management; for crew welfare and retention solutions; for charting and navigational requirements; and, for safety at sea, and other critical industry areas and requirements.

The next conference in the **Maritime Insights Series** will take place in Singapore in February 2013, and will provide another regionally-specific overview and analysis of topics comprising the service provision and technology deployment of satellite-based narrowband and broadband communication solutions at sea. Again, this will be in collaboration with InterManager, and will also potentially feature speakers from the other international maritime industry associations such as InterCargo and InterTanko.

Prior to this event the GVF-EMP Partnership will deliver on two other conferences, one in the already well-developed vertically-oriented series **Oil & Gas Communications**, taking place in Kuala Lumpur ("KL") during November 2012; the other, a brand-new departure into the horizontally -oriented subject of **Ka-band** ("Ka"), taking place in London during December 2012.

The programs for these latter two events are now in development, and will be available through the GVF-EMP Partnership website at **www.uk-emp.co.uk**.

One of the key features of all the GVF-EMP conferences is that the audience for the events is always far greater than the numbers of attending delegates. This is because immediately following each conference the speaker presentations are uploaded to the event website, and PDF versions of almost all of the conference content (some presentations are not always immediately available due to commercial/ corporate restrictions) is available for anyone to download on a free-of-charge basis.

This is now the case for **"Maritime Insights Europe 2012: Expanding Communications with Fixed & Mobile Networking Solutions to Further Horizons"**, and the following content is accessible to all at www.uk-emp.co.uk/7th.MIEu.Ldn.2012/index_files/Page319.htm.

On the first day, **"Analysing Maritime Communications Demand & Supply: Understanding the Sector's Dynamics"** was analyzed from Claude Rousseau, Senior Analyst, Northern Sky Research (NSR); and, Richard Roithner, Senior Consultant, Euroconsult; and was followed by the presentations of Kartik Sinha, Maritime Market Manager, Inmarsat Maritime; Francis Prout, Senior Systems Engineer, iDirect; and, Andrew Faiola, Global Accounts Director, Intelsat, on **"Evolving the "Unlimited Broadband" Bandwidth Equation: New Evolutionary Trends in C, Ku, Ka & L Frequency Footprints for the Maritime Space"**.

Featuring next were the views of Jan Hetland, Director, Datacomms Services, Technology Division, Telenor Satellite Broadcasting; and, Frank Zeppenfeldt, Future SatCom Projects, ESA-ESTEC on **"Satellite Networking & Expanding Maritime Communications for an Arctic Horizon"**; followed-up with an overview of **"Segmenting Maritime Sector Communications Services: Who Wants What and Where?"** with Demetris Makaritis, Fleet Manager, Navigator Gas. Frederick Morris, Vice President, Sales Engineering, Comtech EF Data then provided his perspectives on the **"Evolution of Maritime Satcoms Service: SCPC for Maritime - the Past is Prologue**", bringing the first half-day to a rewarding close.

The subject of **"VSATs at Sea & Designing Dedicated Targeted Solutions for Multiple Parameters in Operational Ship Management: the Vessel and Company Type, the Data Volume and Crew Requirement"** was assessed by Kaushik Roy, DPA & Company Security Officer, MOL LNG; Steven Gosling, Training & Quality Manager, "Y" Generation, Nautical Institute; and, Ghani Behloul, Chief Marketing Officer, Vizada.

Filip Vanheer, Global Business Development Manager, Maritime Satellite Solutions, Orange Business Services then addressed the question **"Is Cloud Computing Part of the**

Future of Maritime Industry Satellite Networking?" which was followed by an examination of **"Spectrum Shift: Satellite Operators, Network Providers & Deployment of New Global Broadband"** by Simon Gatty Saunt, Vice President, Sales Enterprise, Europe & CIS, SES.

The first day was concluded with a **"Regulatory Open Forum - Communications Inshore & on the High Seas: Who Makes the Rules? Who Enforces the Rules?"** led by Carlos Nalda, Telecommunications Attorney, Squire Sanders & Dempsey; and, Christopher Snowdon, Manager, Specialist Services, Access Partnership.

Day Two opened with a presentation from the Head of Maritime Safety, Inmarsat Maritime, Peter Blackhurst and his appraisal of **"Safety and Distress Maritime Communications Systems & Satellite Broadband: GMDSS in the Fixed & Mobile Environment"**.

The subject of **"Broadband at Sea & Crew Welfare"** was detailed by Mark Woodhead, Managing Director, Headland Media; and that of **"Emerging Trends in the Maritime Communications Marketplace"** was presented by Roger Adamson, Chief Executive, Stark Moore Macmillan & Chairman of the International Maritime Sales & Marketing Association. **"Maritime ICT & Cost-Saving Integrated eProcurement Strategies"** were examined by Paul Ostergaard, Founder & CEO, ShipServ; and Guy Adams, Vice President, Software Engineering, iDirect-SatManage offered his analysis of **"The Satellite Maritime Network Management Imperative"**.

The penultimate conference session presented the combined views of Roger Ringstad, Managing Director, Seagull; Assoc. Prof. Claire Pekcan, Senior Lecturer, Course Leader, MSc Shipping Operations, School of Maritime Training, Warsash Maritime Academy (+ MSc student Richard Wild); and, Greg Selzer, Account Manager, Online Learning, SatProf on **"Maritime Sector Training Strategies & Resources: Satellite Technologies Installation/Operation & Computer-Based Training"**.

The final wrap-up session, of what was widely lauded as a very good conference indeed, featured closing remarks from me in my capacity as Co-Chairman of the GVF Maritime SatCom Forum (MSF) and Capt Kuba Szymanski, Secretary General of InterManager.

For further information about all GVF-EMP conferences, please contact martin.jarrold@gvf.org or paul.stahl@uk-emp.co.uk.

Martin Jarrold is Director of International Program Development of the GVF. He can be reached at martin.jarrold@gvf.org

Industry*Briefs*

Major industry news and developments

MERGERS & ACQUISITIONS

MDA Acquires Space Systems/Loral

MacDonald, Dettwiler and Associates Ltd. (MDA), a Canadian provider of essential information solutions, has signed an agreement on June 27 to acquire 100% of **Space Systems/Loral, Inc.** (SS/L) for US$875 million in a transaction that is immediately accretive.

The transaction meets MDA's long-term objective of gaining a stronger presence in the U.S. market, according to MDA.

SS/L has a U.S.-based workforce of 3,200 highly skilled employees, and over one million square feet of state-of-the-art facilities. SS/L will continue to operate under its brand and management team.

Eutelsat Acquires GE Satellite

At CommunicAsia 2012 in Singapore, **Eutelsat Communications** announced it has concluded negotiations to acquire the **GE-23 satellite**, associated customer contracts and orbital rights from GE Capital for US$228 million. The transaction is expected to close in the second half of 2012, subject to regulatory approvals.

Built by Thales Alenia Space, GE-23 was launched in December 2005 and has an expected useful life of 15 years. From its location in geostationary orbit at 172 degrees East, the satellite offers unique coverage over the Asia-Pacific region via a payload of 20 Ku-band transponders accessing five interconnecting beams and 18 C-band transponders connected to a trans-Pacific beam. Leveraging its comprehensive coverage and high-bandwidth capability, GE-23 offers a broad range of telecom services to a diverse base of blue chip customers. GE-23 will be integrated into the Eutelsat Communications fleet, with a smooth transition for existing customers. It will be renamed EUTELSAT 172A.

abertis Closes the Sale of 7% of Eutelsat to China Investment Corporation (CIC)

Spanish telecommunications company **abertis** agreed to sell 7% of **Eutelsat** to **China Investment Corporation (CIC)** for €385.2 million. The transaction, which generated net capital gains of €237 million, follows abertis' January sale of 16% of Eutelsat in a private placement among qualified investors.

abertis will remain a Eutelsat shareholder, with a stake of 8.35%. In compliance with the terms agreed by abertis in the recent placement of a 16% stake in Eutelsat's share capital among qualified investors, CIC has agreed not to dispose of the acquired shares ("lock-up") during the period that remains from the initial six months that abertis had agreed.

EXECUTIVE MOVES

RRsat Appoints Avi Cohen as Chief Executive Officer

RRsat Global Communications Network announced the appointment of **Avi Cohen** as Chief Executive Officer effective July 1, 2012. Cohen will be replacing David Rivel, founder and CEO of the Company, who last year announced his intent to retire by the end of June 2012.

Cohen has 30 years of business leadership experience in various positions at a number of high technology and telecommunication firms.

Most recently, from December 2008, he served as President and Chief Executive Officer of Orbit Technologies.

Miranda Mills Appointed VP Aerospace for Global Xpress

Inmarsat has appointed **Miranda Mills** as Vice President of Aerospace for Global Xpress. Based in Nyon, Switzerland, Mills will join the expanding Global Xpress team for Inmarsat's next generation Global Xpress programme, a service that will offer seamless global coverage and deliver unprecedented mobile broadband speeds of up to 50MB/s for users in the government, maritime, enterprise, energy and aeronautical sectors. As VP for Aerospace, Mills will be responsible for developing all Global Xpress aeronautical services worldwide, building on Inmarsat's long presence in satellite-based aviation safety and operations communications with the proven Swift64 and SwiftBroadband services. Leading the Global Xpress aviation team, she will help exploit the business opportunities created by the unrivalled increase in airborne bandwidth that Global Xpress will deliver. She will oversee all aspects of the aerospace opportunity, including product and service delivery, partner selection and relations, and commercial issues.

Miranda Mills

KVH Appoints Christopher Young as SVP

KVH Co., Ltd. announced that Christopher Young has been appointed as Senior Vice President, Service Provider and International Market Group. Young is a 29-year veteran of the ICT industry with a proven track record in sales leadership and will be responsible for overseeing KVH's sales to service providers

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worldwide and to enterprise customers across Asia Pacific. Most recently, Young served as Vice President, Carrier Markets at Level 3 Communication and was based in Washington D.C., where he was responsible for growing Level 3's Cable, Satellite and Wholesale Content Delivery Network (CDN) business.

Thuraya Appoints New Government Services Consultant

Thuraya Telecommunications Company announced the appointment of Amal Ezzeddine as their new government services consultant. Ezzeddine will be supporting the Thuraya government team in expanding its footprint in the mobile satellite service (MSS) market around the GCC, with particular focus on the UAE government sectors. Ezzeddine has held posts in several government and private sector organizations including Department of Health and Medical Services (DOHMS) and the Australian Consulate General in Dubai.

Lockheed Martin Announces New Appointments in Space Systems and Information Systems & Global Solutions

Lockheed Martin announced key leadership appointments in its Space Systems Company (SSC) and Information Systems & Global Solutions (IS&GS) business areas. **Rick Ambrose** was appointed to the newly created position of vice president and deputy, Space Systems Company, reporting to executive vice president Joanne Maguire.

Ambrose, who currently leads IS&GS-National, will be succeeded by **Tim Reardon,** currently vice president of operations for IS&GS-National. Both appointments are effective July 2. Ambrose brings 33 years experience in the aerospace and defense industry to his new role. He previously served as vice president and general manager of SSC's Surveillance and Navigation Systems business and led Lockheed Martin's Mission Systems and Sensors Tactical Systems business. Reardon, who joined Lockheed Martin in 1998, was named vice president, operations for IS&GS-National in January 2011, and previously led the former IS&GS-Global and the IS&GS-Enterprise Integration Group businesses.

Satlink Appoints Director of Sales for Asia

Rajeev Kaushik

SatLink Communications Ltd., has expanded its operations into Asia by opening a new office in Singapore. The new office will support the company's strategy to expand its reach and provide a gateway for broadcasters, enterprises and telecoms operators into and out of Asia. The office will be headed up by **Rajeev Kaushik**, the newly appointed Director of sales for Asia, who will be spearheading new business activities in the region.

Kaushik will be heading SatLink's Asian sales and business development activities. He brings to the role more than 15 years experience in the Satellite and Broadcast market within Asia and the Middle East. Prior to joining SatLink, Rajeev held engineering and management roles within the satellite and VSAT market including: SingTel and Intelsat. In his role at SatLink, Rajeev will be responsible for establishing and developing strategic partnerships with leading industry operators and broadcasters within Asia.

Hawaii Pacific Teleport Hires Jim Lyons

Hawaii Pacific Teleport (HPT), announced the expansion of its executive team with the addition of **Jim Lyons** as Managing Partner and Vice President, Strategic Business Development. HPT has also appointed **Jean-Robert Barallon**, Vice President of Sales & Marketing, to Managing Partner.

Jim Lyons

Jim brings over 25 years of experience in broadcast, media, and satellite communications. He most recently held the position of Principal Program Manager and Director of Advanced Services at Rockwell Collins, a pioneer in the development and deployment of innovative communication and avionic solutions for both commercial and government applications. Prior to Rockwell Collins, Jim spent over a decade in senior management positions at Ascent Media and COMSAT, where his responsibilities included the oversight of engineering design, operations, and implementation teams.

Jean-Robert, with over 30 years of experience in the global satellite communications industry across all aspects of sales and marketing, came to HPT in September 2011 from Telesat, a leading global fixed satellite services operator. Prior to Telesat, Jean-Robert built his knowledge base as President of Intelsat USA Sales Corp., as well as senior sales management positions at IPX, Newtec, and Cable & Wireless.

Go to www.satellitemarkets.com to get the latest news, analyses and features on the global satellite industry

Update on the Australian Broadband Network

Several things became clear during the privatization process of Telstra in the 00s. Broadband quality was below the international benchmark; end-user and wholesale prices were above that mark; and there was no economically viable business case for high-speed broadband infrastructure for regional and rural Australia. This is according to a recent Research and Markets report entitled "Australia - The National Broadband Network."

Several things became clear during the privatisation process of Telstra in the 00s. Broadband quality was below the international benchmark; end-user and wholesale prices were above that mark; and there was no economically viable business case for high-speed broadband infrastructure for regional and rural Australia.

At that time both sides of government were in favour of government intervention to rectify this situation. Telstra, however, was determined to maintain its monopoly and in the end the government had to step in. At the same time, because of the GFC, the government decided to change its broadband infrastructure plan from a regional to a national one. They also linked that to the development of the digital economy and launched supporting policies in e-commerce, e-health, e-education and smart grid, all aimed at utilising the NBN for those purposes.

The $36 billion plan includes a government investment of $27 billion and needs to be seen in the context of the $60 billion raised by the privatisation of Telstra.

The start of 2012 saw the conclusion of the structural separation and other regulatory issues associated with the rollout of the NBN. The ACCC also issued its wholesale conditions for the transitional period. Two months later NBN Co launched its rollout plan for the next three years, which showed that by the end of that period the NBN will be within the reach of close to four million households and businesses across the country.

This report provides financial and operational information regarding NBN Co's corporate plan, including forecasts covering the three years up to 30 June 2013. The plan outlines competitive pricing for wholesale broadband, including a basic service offering with a uniform national wholesale access price.

There is now also more detailed information becoming available from the Opposition and, while strong areas of disagreement remain, the reality is that, despite the possibility of a change of government in late 2013, the NBN is here to stay.

For more information visit http://www.researchandmarkets.com/research/t5rj2g/australia_the_na

87% of US Households Subscribe to Multichannel Services

New consumer research from Leichtman Research Group, Inc. (LRG) finds that 87% of households nationwide subscribe to some form of multi-channel video service. The percentage of households that subscribe to a multi-channel video service is similar to the past two years, and up from 80% in 2004.

The mean annual household income of multi-channel video subscribers is 53% higher than the household income of non-subscribers. Nationwide, 6% with annual household incomes over $75,000 do not subscribe to a multi-channel video service -- compared to 12% with incomes of $30,000-$75,000, and 27% with incomes under $30,000.

These findings are based on a telephone survey of 1,369 households from throughout the United States, and are part of a new LRG study, *Cable, DBS & Telcos: Competing for Customers 2012*. Other related findings include:

- Overall, 42% of individuals agree that changes in the economy have negatively impacted their household in the past year -- down from 50% last year, 47% in 2010, and 44% in 2009.
- 39% of those negatively impacted by the economy (8-10) agree that they reduced spending (8-10) on TV, Internet, and phone in the past year -- compared to 18% of those less impacted (1-7) by the economy
- 32% of those negatively impacted by the economy agree that they will likely reduce spending in the next six months -- compared to 12% of those less impacted by the economy
- 16% of those negatively impacted by the economy are likely to switch video providers in the next six months -- compared to 8% of those less impacted by the economy
- Mean reported monthly spending on multi-channel video service is $78.63 -- an increase of 7% from last year
- Multi-channel video subscribers with annual household incomes over $75,000 report spending 14% more per month than those with incomes under $30,000.

Multiscreen Consumers are Changing Media Dynamics

ComScore, Inc. and the Coalition for Innovative Media Measurement (CIMM) released a research white paper entitled *How Multi-Screen Consumers Are Changing Media Dynamics*, revealing several new findings about the viewing habits of consumers who engage with media brands across multiple touchpoints.

"While TV remains the leading media channel, once TV-centric media brands now engage with their consumers across a variety of digital touchpoints. While this enhances the quality of brand engagement, it also increases the complexity of media planning and analysis by orders of magnitude," said Joan FitzGerald, comScore VP of TV & Cross-Media Solutions. "By leveraging comScore's unique single-source multi-screen measurement panel, we are radically reducing this complexity by providing media companies with actionable insights that can be used to determine how to effectively reach their target audiences and optimize cross-media planning."

Key insights from the paper include:

- **Consumers are Engaging with Brands Across Platforms** – A study of 10 broadcast network & cable brands covering a five-week period showed that an average of 90 percent of consumers engaging with a given brand did so on TV, while 25 percent did so online and 12 percent via online video.
- **Online Video & Multi-Screen Consumers are Most Engaged and Loyal Brand Consumers** – Online video consumption proves to closely associate with consumer engagement with media brands overall. For most of the media brands, the multi-screen consumers who use the media brands via TV and online video spend more time with the content on any platform, and spend more time consuming the content on TV.
- **Multi-Screen Consumer are Demographically "On Target"** – The study found that the segments of multi-screen consumers showing the highest propensity to engage tended to correlate strongly with those brands' key demographic targets, suggesting that engagement on other platforms represents an important extension of the key demographic audiences' use and enjoyment of the media brands.

18 Reasons Why and Then Some...

CASBAA Convention 2012
Hong Kong, Grand Hyatt Hotel
October 29-November 1, 2012

CASBAA's annual flagship event will take place from October 29 to November 1, 2012 at the Grand Hyatt Hong Kong. This year's theme, **"18 Reasons Why,"** illustrates how the CASBAA Convention is consistently the industry's must attend event in the region.

With 18 markets, 18 conference sessions, 18 data snapshots and 18 holes of golf, the CASBAA Convention 2012 will feature a powerful line-up including Opening Keynote Ben Silverman (Electus) with David Zaslav (Discovery Communications), Gerhard Zeiler (Turner Broadcasting System International) as well as Robert Kyncl (Google), Richard Freudenstein (Foxtel), Sheikh Ahmed bin Jassim bin Mohammed Al-Thani (Al Jazeera), along with Mohamed Sharil Tarmizi (Malaysian Communications and Multimedia Commission)*.

Topics covered will range from redefining TV models, the changing modes of media consumption, the impact of over-the-top and digital terrestrial television services, the importance of localised content, socializing TV, and the challenges of regulating an increasingly competitive set of technologies and industries.

Additionally, case studies on how pay TV does maximise ROI along with detailed "market watches" for Myanmar, Indonesia, Thailand, Vietnam and more will be supported by workshops on cross media research, transcoding technologies, integrated subscriber marketing and ring-fencing the pirates providing useable, real world, practical tool kits.

"18 Reasons Why" not only reflects our 18 markets, but is a potent reminder that the CASBAA Convention is much more than just another conference in the diary," said Simon Twiston Davies, CEO, CASBAA. "It's the Asia Pacific industry annual general meeting."

From its beginning in 1991 representing a barebones cable industry, CASBAA has emerged as the primary voice for a sector reaching 420 million connections under a footprint of 18 markets – Australia, China, Hong Kong, India, Indonesia, Japan, Macau, Malaysia, Myanmar, New Zealand, Pakistan, Papua New Guinea, Philippines, Singapore, South Korea, Taiwan, Thailand and Vietnam.

CASBAA also represents diverse sectors with member organisations drawn from pay TV channels, multichannel platforms, technology specialists, the global advertising sectors, the region's most important regulators, Asia Pacific satellite operators, and a whole world of online and digital service providers.

As our industry recognises the vital role of collaboration, for both market growth or individual success, the CASBAA Convention is the venue where today's leaders join forces, where ideas are explored and where business is generated. Added Twiston Davies: "Reasons to attend are myriad but the message is clear – the CASBAA Convention 2012…can you afford to miss it?"

For more information about the CASBAA Convention 2012, please visitwww.casbaaconvention.com.

Events Calendar

September 6-11, 2011, **IBC 2012**, RAI Exhibition Center, Amsterdam, The Netherlands, Tel.: +44 (0) 20 7832 4100, e-mail: info@ibc.org web: http://www.ibc.org

September 10-14, 2012, **World Satellite Business Week**, Westin Hotel, Paris, France, phone: + 33 1 49 23 75 30 web: http://www.satellite-business.com/

September, 19-21 2012, **China Satellite 2012, Beijing, Hotel Nikko New Century,** Contact person: Gloria Wong Phone: +-86-10-58494900 Fax: +86-10-62218122 Email: gloria@china-satellite.org web: http://www.china-satellite.org/index.htm

October 29-November 1, 2012, **MILCOM 2012**, Orlando, Florida, Contact: e-mail: contact.milcom2012@harris.com. web: www.milcom.org

October 29 – November 1, 2012, **CASBAA Convention 2012,** Grand Hyatt Hong Kong, Tel: +852 3929 1714, email: Kenneth@casbaa.com, web: www.casbaaconvention.com

November 14-15**, 2012, SATCON 2012, New York, NY** Register today with VIP Code CCE39 to receive your free pass at www.satconexpo.com/SMR.

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Registration for MILCOM'12 will officially open in June. For more information, including a technical program outline and call-for-papers, visit www.milcom.org.

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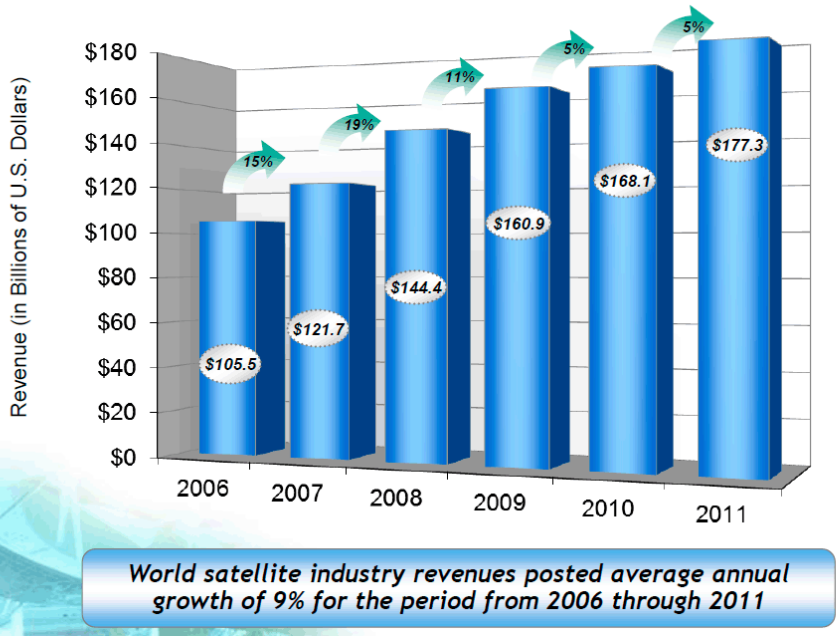
Vital Statistics

Global Satellite Industry Revenues

The latest Satellite Industry Report by the Satellite industry Association shows the industry topping US$ 177.3 Billion in revnues in 2011. World satellite industry revenues has posted an average growth rate of 9% per annum since 2006 even during the height of the global recession.



Source: Satellite Industry Association (www.sia.org)

ADVERTISERS' INDEX

The Satellite Markets 25 Index™

Company Name	Symbol	Price (Jul 12)	% Change from Last Month	52-wk Range			% change from 52-wk High
Satellite Operators							
ASIA SATELLITE	1135.HK	20.85	-9.94%	14.00	23.35	↓	10.71%
EUTELSAT COMM.	ETL.PA	24.61	16.19%	20.16	31.63	↓	22.19%
APT SATELLITE	1045.HK	2.00	-6.10%	0.95	2.64	↓	24.24%
INMARSAT	ISAT.L	480.50	11.82%	287.50	561.00	↓	14.35%
SES GLOBAL FDR	SES.F	18.80	4.33%	15.70	19.29	↓	2.54%
Satellite and Component Manufacturers							
Boeing Company (The) Common Stock	BA	71.71	3.02%	56.01	77.83	↓	7.86%
COM DEV INTL	CDV.TO	2.92	16.80%	1.55	2.95	↓	1.02%
Lockheed Martin Corporation Com	LMT	86.02	3.89%	66.36	92.24	↓	6.74%
Loral Space and Communications,	LORL	70.62	17.11%	45.65	82.48	↓	14.38%
Orbital Sciences Corporation Co	ORB	13.01	16.26%	10.59	18.48	↓	29.60%
Ground Equipment Manufacturers							
C-Com Satellite Systems Inc.	CMI.V	0.52	-13.33%	0.39	0.90	↓	42.22%
Comtech Telecommunications Corp	CMTL	28.28	-2.08%	24.04	35.65	↓	20.67%
Harris Corporation Common Stock	HRS	40.25	1.18%	32.68	45.79	↓	12.10%
Honeywell International Inc. Co	HON	53.60	-3.70%	41.22	62.00	↓	13.55%
ViaSat, Inc.	VSAT	38.70	-7.90%	31.18	49.80	↓	22.29%
Satellite Service Providers							
Gilat Satellite Networks Ltd.	GILT	3.08	-3.45%	3.04	5.20	↓	40.77%
Globecomm Systems Inc.	GCOM	9.78	-7.74%	9.44	16.06	↓	39.10%
INTL DATACASTING J	IDC.TO	0.24	0.00%	0.21	0.45	↓	46.67%
ORBCOMM Inc.	ORBC	3.69	13.19%	1.98	3.95	↓	6.58%
RRSat Global Communications Net	RRST	5.74	21.61%	3.50	6.40	↓	10.31%
Consumer Satellite Services							
BRITISH SKY ADS	BSYBY.PK	42.71	-0.19%	38.92	48.77	↓	12.43%
DIRECTV	DTV	47.55	6.97%	39.82	52.99	↓	10.27%
DISH Network Corporation	DISH	26.31	-6.17%	20.89	35.64	↓	26.18%
Globalstar, Inc.	GSAT	0.26	-28.30%	0.22	1.21	↓	77.69%
Sirius XM Radio Inc.	SIRI	2.0650	9.26%	1.27	2.41	↓	14.32%

INDEX	Index Value (Jul 12)	% Change from Last Month	% Change Jan. 03, 2012
Satellite Markets 25 Index™	1,093.82	6.50%	4.97%
S & P 500	1,334.76	1.86%	4.21%

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 Markets Index™ is January 2, 2008--the first day of operation for Satellite Market and Research. The Index equals 1,000. The Satellite Markets Index™ provides a benchmark to gauge the overall health of the satellite industry.