

Strategic Growth in the Maritime Space for Satcoms

by **Martin Jarrold**
Chief, International Program
Development, GVF

Over the last few years I have been devoting a not insignificant percentage of my work energies to activities linked to the offshore and maritime sectors – strategically important customers of satellite industry equipment vendors, service providers, and operators. If you are a regular reader of this column, you will know all about the GVF Oil & Gas Communications Europe event that is taking place in Aberdeen, Scotland, as I write; and, about the forthcoming Broadband Maritime Europe 2010 conference that will take place in London, England, 28-29 June.

These events, which follow a series of eight previous communications conferences for the offshore oil & gas sector, and two previous conferences for the communications environment of the maritime industry, reflect the Global VSAT Forum's recognition of this increasing strategic importance to the satellite industry of the entire offshore and maritime sector. Indeed, GVF is currently extending its long-standing activity and collaboration in this space by continuing to build not only on conferences and other promotions efforts, but also on a further two facets of its three-fold focus of: **Promotions, Advocacy, and Training.**

(Continued on page 7)

Mobile TV in the US: Is It Ready for Prime Time?

by **Elisabeth Tweedie**
Contributing Editor

The OMVC (Open Mobile Video Coalition) took a prominent position at NAB this year with the Mobile DTV Marketplace set up in the Central Lobby and a Mobile DTV Pavilion in the South Hall, as well as hosting a breakfast and speaking at several sessions. The OMVC is an association of nearly 900 TV broadcasters supporting the A/153 ATSC Mobile DTV Standard which was adopted by the ATSC in October 2009. This is an in-band system providing the mobile service as part of the terrestrial transmission within the same 6MHz channel used for ATSC HD and SD programming.

The mission of the OMVC is to accelerate the development of mobile digital TV in the US. The message coming across from them was loud and clear: Consumers want Mobile TV and the broadcasters are getting ready to provide it.

Information on the prospective demand came from a survey of 1,000 online users

conducted in November 2009 by Magid Media Labs. This survey found that local news and information is the key driver with 88% of respondents interested in watching this content. Overall 46% of respondents rated Mobile DTV as very or somewhat appealing, but this figure jumped to 65% among Millennials (18-29 year olds). However when pushed as to intent to watch the figures dropped somewhat with 32% overall and 48% of Millennials saying that they probably or definitely would watch mobile TV. Interestingly 36% of respondents said that



one of the places that they would watch TV on a mobile device would be in the home. The most popular devices for viewing were laptops or netbooks (49% of those who rated Mobile TV as appealing) and Smartphones (31% of those who rated Mobile TV as appealing).

A few years ago the perceived wisdom was that special short form video content was needed for mobile devices – particularly phones with their relatively small screens. Now that we have more empirical data the perceived wisdom is that con-

(Continued on page 4)



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The Real Risks of a Satellite Collision



The satellite industry have grabbed the headlines in the mainstream press recently reporting the possible risk of a collision due to the Intelsat losing control of one of its satellites. The stories in the press tend to sensationalize the risks involved calling the offending satellite, Galaxy-15 as “zombiesat.” While, indeed, Intelsat has lost control of the satellite, what the press reports downplay is the lengths to which Intelsat and its main rival SES have gone through to avoid any further risks of a collision or interference to an SES satellite, AMC-11 which is in the path of the out of control satellite.

Satellite insurance companies estimate the risk of a two satellites colliding as one in 10 Billion chance (even despite the fact that one satellite-to-satellite collision did occur just last year when a out of service Russian satellite collided with an Iridium satellite—the fact that we just had one just minimizes the possibility of one occurring in the near future). So the reports of a possible collision are slightly exaggerated. The real risks is not so much as the wayward Galaxy 15 slamming into neighboring satellites as to the possibility of signal interference from the satellite which its still active transponders that might cause service disruptions.

To their credit, both Intelsat and SES, two fierce competitors in the global satellite market, have gone out of their way to work together to avoid any further service disruptions. Intelsat and SES have even exchanged proprietary information and have closely coordinated their efforts to minimize further risks to its satellites. It is heartwarming to know that when in times of crisis, the satellite industry can pull together and put their differences and competitive instincts aside to work for the common good.

The satellite industry which has been called upon during times of disasters, both human and natural, is no stranger to cooperation and sharing of resources when the situation warrants it. We have seen this every time a major disaster occurs such as the recent earthquake in Haiti. I think it’s second nature for the industry, which has to share orbital slots and limited frequencies that are in the public domain, to work together to ensure that these resources are utilized effectively with the least possibility of interference to all parties involved.

Virgil Labrador

ADVERTISERS' INDEX

Amos Spacecom.....5	Spacenet.....front cover and 2
www.amos-spacecom.com	www.spacenet.com
ATCi.....16	The SpaceConnection.....14
www.atci.net	www.thespaceconnection.com
Gilat Network Systems.....6	
www.gilatnetworks.com	



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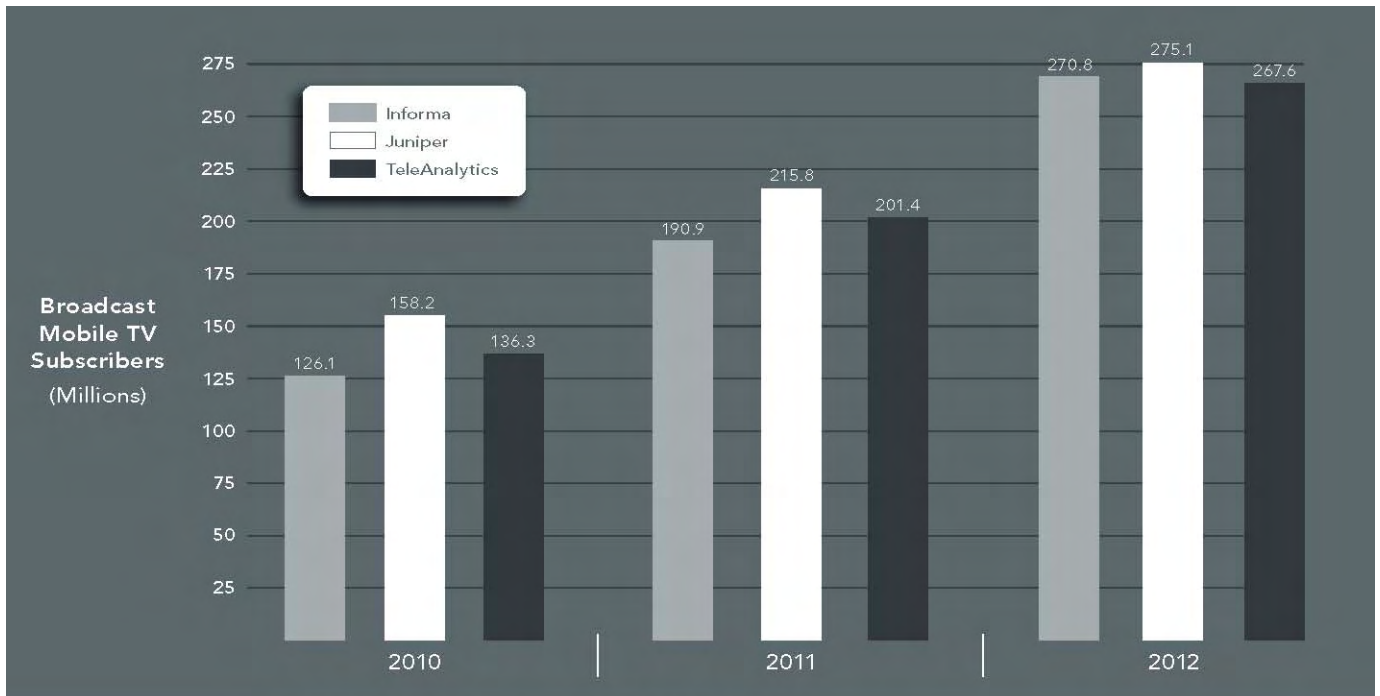
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-sumers will watch full length video content on the “best available” screen at the time and place they want to view. What we don’t have in the US is much evidence that for mobile viewing consumers prefer linear or broadcast TV over VOD – whether streamed or downloaded - which is a very different business to the one proposed by the OMVC.

MediaFlo has been operational in the US over Verizon and AT&T networks

on-demand content and interactive features. This may indicate that they have found mobile live TV to be a hard sell. Sling Media which allows subscribers to access live TV – from their own service - and content from their DVR or PVR on remote devices including some smart phones is another hybrid model currently available in the US. Customer numbers are not available but Sling have commented that since the iPhone and other smartphones debuted their sales have increased by 45%.

As would be expected with the increased penetration of the iPhone, other smart phones and netbooks the numbers of subscribers watching video on mobile devices is growing rapidly; 17.5 million at the end of 2009 an increase of 57% from a year before according to Nielsen’s Three Screen Report. Since this represents approximately 6% of US cell phone users, there is still plenty of room for growth here! Interestingly the average amount of time spent watching video remained constant at 3 hours and



Projected Growth of Mobile TV subscribers worldwide (Source: Media Flo)

for nearly 3 years now, but still hasn’t released any subscriber numbers, although public guesstimates put the figure in the low hundreds of thousands. MobiTV which provides a mixture of live TV and On-Demand Content had over 7 million subscribers last year – but some of these are in Canada as well. To date MediaFlo has only provided live linear content but announced during NAB that in the second half of this year this would be supplemented with

Technically it is now also possible for cable operators to allow their customers to watch their VOD content on mobile devices via any suitable wireless technology. Arris and Motorola to name just two were both demonstrating this at The Cable Show in Los Angeles in May, however neither would admit to having sold the technology to any operators.

37 minutes per month.

On May 24th the OMVC is launching the Washington DC. Consumer Showcase. This is essentially a test market planned to last for four months, to evaluate consumer reaction to advertising supported mobile TV. The Showcase is sponsored by LG Electronics and Samsung both of whom supply mobile TV receiving / decoding / tuning chipsets. 9 TV stations will be partici-

pating. The programming will be delivered over the same infrastructure as OTA home broadcasts, but will be modified to allow viewing on mobile devices. The technology has been tested on trains moving at 150mph – although I don't think there are too many of these in Washington DC! Viewers taking part in the Showcase will be using a variety of devices including Mobile Phones, Mobile DTV receivers with playback functions, Mini Netbooks and a Wi-Fi access device that enables reception of mobile TV on other Wi-Fi equipped devices such as the iPhone, or Blackberry.

The objective of the Showcase is to test different business models, and measure and accelerate consumer interest in Mobile TV.

A newly formed consortia of 12 TV groups known as Pearl Mobile DTV will presumably be watching the Showcase very carefully. This JV includes Fox, NBC, Ion, Belo, Cox, Scripps, Gannett, Hearst, Media General, Meredith, Post-Newsweek and Raycom. By aggregating their existing spectrum the JV will be able to offer mobile TV to 150 million consumers in the US. According to OMVC 45 stations in the US have started mobile DTV broadcasts. So is mobile TV ready for prime-time in the US and what if anything does this mean for satellite?

Taking the first question: Consumers have an appetite for mobile video, that is now known. There remains the perennial problem of getting enough devices out at the right price point to stimulate demand, assuming of course

that the content is right! Unlike FloTV Pearl will be run by broadcasters – experienced organizations that are used to meeting consumer demand for video which should prove to be an advantage as far as content is concerned. Free is usually a good price as far as the consumer goes and generally they have shown willing to accept advertising as part of that package. But the money has to come from somewhere and advertisers don't pay if the audience isn't there –the old chicken and egg situation. However the biggest stumbling block for Mobile TV is likely to be the shift in viewing habits that is occurring. TV viewing in the home has been moving away from linear to on-demand – initially via the PVR and now via the web - for several years now; so apart from certain time sensitive programming i.e. news, weather and sports it's

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hardly realistic to assume that this trend will be reversed for mobile video. Early adopters of smartphones are likely to be the same consumers that are leading the move to watching web VOD. So unless mobile TV can encompass VOD, which for members of the OMVC like Pearl, means storage in the user device, with the exception of time sensitive programming broadcast mobile TV is likely to have a hard time creating a mass audience.

As for satellite – if existing programs are simply reformatted to be viewed on a mobile device this is likely to be done locally, so won't create any additional demand for satellite capacity. If new mobile programming is created this would be different, but as yet there is no indication that Pearl or any

other members of the OMVC intend to create new programming.

The only direct to the consumer satellite mobile TV service in the US was ICO MIM otherwise known as DBSD which filed for bankruptcy last year before ever starting a commercial service. So for now at least I think the message to satellite operators is "Watch this Space"but don't hold your breath! There is

a market for video content delivered to a mobile device, but with the exception of news, weather and sports a mass audience for OTA broadcast programming is likely to evolve much more slowly than the audience for VOD.



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 +1 310-292-0755 or +44 (0)7768 610574.

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The Maritime Space for Satcoms ... from page 1

These efforts have been recognised and lauded. As a result of the participation, in either speaking or delegate capacities, of the following organisations at the 2010 GVF Broadband Maritime Conference, 'New Communications Networking for Offshore & the High Seas', in Singapore (alphabetical order): Anglo Eastern Ship Management - APL (Neptune Orient) - B&H Equimar - CGP Solutions - CSIT - EMS Ship Management - Executive Ship Management - Fr8 - Gardline Shipping Australia - Germadept (S) Pte. Ltd - Gilat Satellite Networks - Hallin Marine - Hong Lam Marine - Horizon Mobile Communications - Hughes Network Systems - IM Skaugen Marine Services - Inmarsat - Intellian Technologies Inc - Intelsat - JR Orion Services Pte. Ltd - KT Corp - Marine Technologies LLC - Mari-Time Solutions (S) Pte. Ltd - MTM Ship Management - MTN Satellite Communications - Norgas - Northern Sky Research - Pacmar Shipping - POSH Fleet Services - POSH Maritime Pte. Ltd - Remas2/C-Comm - Schlumberger - Singapore Maritime Academy - SingTel Satellite - Speedcast, Thome Group - Thrane & Thrane - TORM Shipping Singapore - United Ocean Ship Management - V-Ships Singapore - GVF has been encouraged by both users and vendors to introduce the **Broadband Maritime Conference Series** to Europe, as was noted above.

But, beyond promotions, **Advocacy** and **Training** are also vitally important facets of our work in the offshore and maritime arenas.

Advocacy

In fact, GVF advocacy for the maritime VSAT industry has continued for more than a decade. Indeed, the successful defence of C-band satellite spectrum - a valuable maritime communications resource - at the International Telecommunication Union World Radiocommunication Conference in 2007 was recognised in the form of an "Industry Innovator" award given to GVF by the Society of Satellite Professionals International.

Further examples of GVF advocacy work for the maritime market included action related to an ITU Resolution pertaining to "Earth Stations on Vessels" (ESVs). The initial interpretation of the ITU Resolution made by OFCOM, the UK regulator did not favour satellite, and GVF was first to set in motion a regulatory initiative that ultimately reached all of Europe and the Americas, resulting in a far more favourable interpretation and implementation of the licensing regime.


In addition, October 2009 saw publication of the 'Two-Way Satellite Market Survey' a European Space Agency-funded report to which GVF contributed the major research effort

with the satellite industry. The Report provided a detailed analysis of the maritime market **User Segment**, a profile of current satellite industry **Services and Products**, and an examination of the various features/benefits of **Maritime Networks**. Amongst its conclusions, the Report identified the most important and sensitive parameters in the delivery of satellite-based services to the maritime market. The Report featured in a GVF-organised meeting during the Satellite 2010 event in Maryland, USA, recently.

Most recently, GVF has begun planning an advocacy effort in India, where the government has strong prohibitions against maritime and aeronautical satcom. In March this year, the GVF Secretary General was in New Delhi attending to this issue, in coordination with the GVF local affiliate, the VSAT Services Association of India (VSAI).

Training

GVF runs the VSAT industry's global VSAT Certification Programme, winner of the STARS 'Best Skills Developer Award' at Satcom Africa 2009, and recently cited in the SSPI's Industry Innovator awards ceremony. Integral to the GVF VSAT installation training curriculum is a focus on the deployment of systems used in the maritime environment. For example, GVF has developed and have been delivering a Schlumberger Spacetrack 4000 installation course for their stabilized platform. Likewise, GVF has a similar agreement with Cobham to develop Seatel courses. Planning is underway for a course tailored for those who install VSATs in the yachting market. Maritime interests who have embraced the GVF training include KVH, CapRock, Broadpoint, Schlumberger, Seatel, iDirect, Viasat, Gilat, Hughes, and 18 of the world's largest satellite operators.

These efforts will continue, grow, and evolve. So please keep watching the offshore and maritime space - part of which is, by the way, 36,000 kms. above the equator! 



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Spacecom is the operator of the **AMOS** satellites, which provide high-quality broadcast and communication services to Europe, the Middle East, and the Atlantic bridge to the United States. The AMOS satellite constellation, consisting of AMOS-2 and AMOS-3, co-located at the prime orbital position of 4°W, serves Direct-To-Home and other Television platforms in Europe and the Middle East, as well as provides a secure and stable transmission to government agencies. The extensive signal strength and prime location makes the AMOS platform particularly suitable for DBS and DTH operators, as well as a wide range of broadcasters, ISPs, telecommunications operators, and network integrators with Internet, voice, data and digital TV services.

The AMOS-5i satellite, is the latest addition to the AMOS fleet. With a position at 17°E, a new orbital position, Spacecom's coverage is expanding to Africa. AMOS-5i provides powerful C-band and Ku-band coverage over Africa and is serving as an interim satellite until the AMOS-5 satellite's scheduled launch in mid-2011. Once operational, the AMOS-5 satellite will replace the AMOS-5i in its orbital position, expanding both coverage areas and capacity, to deliver high-power C-band and Ku-band capacity to the entire African continent. AMOS-5 and AMOS-5i complement Spacecom's existing satellite fleet consisting of AMOS-2 and AMOS-3, and together with AMOS-4, slated for launch in 2012 to serve Asia, will establish Spacecom as a true global satellite operator.

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Report Highlights Telecom Consumer Trends in China

With the 2010 World Expo, Shanghai is shining a spotlight on China's past, present and future. A new Ericsson ConsumerLab report is turning that spotlight onto the consumer behavior powering the growth, potential and diversity of the world's biggest telecom market. The report, released in conjunction with the Ericsson (Business Innovation Forum in Shanghai from May 17-19, explores the behaviors, trends and circumstances of China's nearly 800 million mobile phone subscribers and 380 million internet users.

With mobile penetration of 56 percent and 8.8 million new subscriptions a month, China has one of the most dynamic markets in the world, as well as the fastest-growing major economy. GDP growth of 8 percent in 2009 and rising incomes are increasing spending power and material wealth. But the picture varies across this enormous country. The urban, rural and youth markets in particular show extreme diversity in user sophistication and demand for services.

Douglas Gilstrap, Senior Vice President and head of Strategy at Ericsson, stresses the importance of China on the telecom world:

"With its enormous and increasingly prosperous population, China - together with neighboring India - is widely expected to provide a large share of future telecom growth. The study provides the latest, in-depth information that we and our business partners need to use to capture that growth. Understanding user behavior is crucial in driving successful innovation in both technology and business models."

Urban: There is a flood of people to China's cities, where users demand and get the latest in advanced mobile internet services. There is huge interest in the latest technology, and rapid income growth - 8.8 percent year-on-year in 2009 - as well as the hunt for status has made China the second-largest luxury consumer in the world. Mobile phones are everywhere, while fixed connections are less common, so people use their mobile handsets for data and voice rather than laptops and dongles.

City dwellers increasingly see internet access as an essential service. They rely on the internet for access to services and social contacts. Curiosity about the world beyond China's borders is also driving change: the number of Chinese tourists heading overseas is set to reach 54 million this year, up from 47 million last year.

"...With mobile penetration of 56 percent and 8.8 million new subscriptions a month, China has one of the most dynamic markets in the world..."

Youth: More educated than their parents, the youth of China are one of the most sought-after target markets in the world. With service consumption rivaling or exceeding their peers in the UK, Sweden and the US, they are early adopters, digital natives, status conscious and - as a generation of single children - more affluent than previous generations.

Rural: Despite a rush to the cities and increasing numbers of migrant workers, a huge proportion of China's population lives in rural areas. Rural incomes are rising and there is soaring demand for technology products, but subscribers use their mobile phones almost exclusively for voice. Relevance of service, ease of use and pricing are the key factors for driving rural market uptake of mobile internet.



Ericsson ConsumerLab studies how consumers act and what they think about telecom products and services, helping operators understand their customers and develop revenue-generating strategies.

It is based on a global research program built on yearly interviews with 40,000 consumers in more than 30 countries, representing the opinions of more than 1.1 billion people. The global research program is built on both quantitative and qualitative consumer market research covering both general market and consumer trends as well as in-depth insights into specific areas.

The two-day global media event, Ericsson Business Innovation Forum, was opened by a guest speech by China's prominent economist Dr. Fan Gang who analyzed future scenarios of the Chinese economy.

Mr. Zhu Lijun of China Unicom and Mr. Bill Huang of China Mobile joined the event and delivered visions of exciting market update. Other speakers included representatives from Chinese online companies, Lenovo, and executives from ST-Ericsson as well as Ericsson.

For more information go to: www.ericsson.com/innovationforum



Pay TV Revenues Will Grow 7% to US\$ 312 Mil. in 2010

Pay TV market growth slowed in 2009 due to the recession. However, 2010 is expected to be a better year as operators have been signing up new subscribers, and existing subscribers are migrating to premium channels and advanced services. “As a result of the positive market outlook for pay TV,” says ABI Research practice director Jason Blackwell, “global pay TV revenue will net more than \$312 billion for cable and telecom carriers in 2010.”

Among the different pay TV platforms, telco TV service revenue is growing the fastest as broadband penetration and Internet speeds ramp up. For example, Deutsche Telekom’s IPTV subscriber base essentially doubled within a year, to one million. As fiber broadband deployment expands its footprint, operators will have the opportunity to offer High Definition IPTV that should help to boost ARPU and service revenue. ABI Research anticipates that telco TV service revenue will top \$17 billion in 2010.

In terms of telco TV service revenue, Western Europe captures the largest market share with 59%. North America and Asia Pacific are the second and third largest telco TV markets. In the Asia Pacific region, telco TV service revenue is expected to grow rapidly during the next few years. In 2009, Asia Pacific telco TV service revenue comprised 10% of the total market, and it is expected to achieve 25% by 2015.

Pay TV operators are competing to raise ARPU and lower churn. Many operators are upgrading programming packages and steadily introducing high definition TV services.

“Pay TV operators need to aggressively promote the purchase of HDTV set top boxes in order to lift ARPU,” notes Research Associate Khin Sandi Lynn. “This does not have to come through subsidies. Carriers could do a better job of promoting the benefits of HD for the end-user viewing experience. Furthermore there is the promise of 3D TV. At present many users are not clear what the benefits are.”

Asia Mobile Subscribers Top 2 Billion in 2009

There were 2.04 billion mobile subscribers at the end of 2009 in Asia and this translated into a significant 22.7% growth over the year, according to a report by HOT TELECOM. By the end of 2009, mobile accounted for 79.7% of all telephone connections in the region, compared with 60.1% in 2005. The number of mobile subscribers is forecasted to have grown by an average of 10.6% to 3.4 billion by the end of 2014 and at that time, mobile penetration should have reached 94.3%.

China and India are by far the region’s two largest mobile markets with an estimated 748 million and 525 million mobile subscribers respectively at the end of 2009. Together these two countries generate 62.3% of Asia’s mobile connections. On the other hand, China and India have some of the lowest mobile penetrations in the region, standing at 56.0% and 44.7% respectively. On the other hand of the spectrum, countries such as Hong Kong and Singapore enjoy by far some of the highest mobile penetration rates in Asia and the world with 174.4% and 137.1% mobile penetration

respectively at the end of 2009.

India and Vietnam have benefited from the highest levels of mobile subscriber growth in 2009, with estimated growth rates of 51.4% and 56.1% respectively. This report, which includes 28 detailed exhibits and tables on Asia’s telecom market, confirms that Japan and New Zealand suffered from the region’s lowest mobile subscriber growth in 2009. “The economic recession has hit hard in some of the region’s countries, translating into stagnation in mobile subscriber growth” HOT TELECOM’s president Isabelle Paradis said.



Find out more about Asia's fixed, mobile and Internet markets in HOT TELECOM’s new 28-page Asia statistics and forecast report: <http://www.hottelecom.com/asia-stats.html>

CASBAA Singapore Satellite Forum Marks its 10th Anniversary

The Cable & Satellite Broadcasting Association of Asia will kick off the 10th anniversary of the CASBAA Singapore Satellite Industry Forum on June 14th at the Shangri-La Hotel with a dynamic program – themed “*More Than Bandwidth*” – with an unrivalled list of clients, operators, satellite manufacturers and launch providers.

The Asia Pacific satellite transponder market is the most vibrant in the world with hundreds of new TV channels and related platforms ready to launch in support of the world's largest and most dynamic pay-TV and mobile services sectors.

Currently, there are more than 20 Fixed Satellite Service (FSS) operators in Asia operating more than 60 satellites. In the next five years, South Asia's transponder demand is forecast to grow at a CAGR of 10%, while China will have 8-9% growth if the pace of liberalization increases, and Southeast Asia is expected to grow by 5%.



- **Andrew Jordan**, President & CEO, **GE Satellite**
- **Bob Billeci**, Senior VP, Technical Operations, **Sony Pictures Television Networks**
- **Christophe Bauer**, VP Commercial Sales, **SpaceX**
- **Deepak Mathur**, VP of Sales, South Asia and the Middle East, **SES WORLD SKIES**

- **Ian Carroll**, EVP & GM, **Turner Broadcasting System**
- **Jonathan Spink**, CEO, **HBO Asia**
- **Mark Whitehead**, SVP and GM, Asia, **BBC Worldwide Channels**
- **Mike Antonovich**, President and CEO, **Genesis Networks**
- **Osamu Inoue**, Senior EVP; Group President, Satellite Business Group, **SKY Perfect JSAT**

"All the numbers are in our favour," said Simon Twiston Davies, CEO of CASBAA. "The on-line market, the growth of digital video broadcast entertainment and mobile communications are all important business catalysts."

Meanwhile, **Jean-Yves Le Gall**, CEO, **Arianespace** will kick off the Forum with an opening keynote examining how the global satellite industry has evolved over the past 30 years and its roadmap for the future. In addition, fellow launch specialist **Yin Liming**, President, **China Great Wall Industry Corporation (CGWIC)** will highlight the potential of China's space industry.

Other featured speakers include:

- **David Ball**, Regional VP, Asia Pacific, **Intelsat**; Chairman, **CASBAA Satellite Industry Committee**

Corporation

- **Paul Brown-Kenyon**, COO, **MEASAT Satellite Systems**
- **Peter Jackson**, CEO, **AsiaSat**
- **Rajiv Khattar**, President Projects, **Dish TV**
- **Ravi Mansukhani**, MD, **Indusind Media & Communication (IMCL)**
- **Rudy Tanoesoedibjo**, President, Director & CEO, **PT MNC Sky Vision**
- **Serge Van Herck**, CEO, **Newtec**
- **Ted McFarland**, MD, **Pacific Skies Ltd**
- **Thomas Choi**, CEO & Co-Founder, **Asia Broadcast Satellite (ABS)**
- **Tim Jackson**, VP Media Product Management, **Intelsat**

The Presenting Sponsor of the CASBAA Singapore Satellite Industry Forum 2010 is **SKY Perfect JSAT Corporation**.

Other sponsors include Arianespace; AsiaSat; COMSAT; Eutelsat; GE Satellite; Intelsat; Marsh; MEASAT; Newtec; SES WORLD SKIES; Space Systems/Loral and SpaceX.

“Thanks to our speakers, sponsors and members for their ongoing support, the CASBAA Singapore Forum is celebrating its 10th anniversary this year, representing a significant milestone for the Association,” added Twiston Davies.

For registration and the full program for the CASBAA Singapore Satellite Industry Forum, please visit: http://events.casbaa.com/singapore_satellite_industry_forum/

Calendar of Events

June 7-8, 2010, **7th Annual Media and Telecommunications Convergence Conference**, Amman, Jordan, phone +962--6-582-8849 e-mail: arabadvisors@arabadvisors.com web: <http://www.arabadvisors.com/Convergence/schedule.htm>

June 14, 2010 **SATELLITE Industry Forum**, Shangrila Hotel, Singapore Tel: +852 2854 9913 E-mail: info@casbaa.com web: www.casbaa.com

June 15-18, 2010 **CommunicAsia, BroadcastAsia and Infocom Media Business Exchange (imbX) 2010** Singapore, Singapore Expo, Tel: +65-6233-6638 E-mail: vw@sesallworld.com web: <http://www.communicasia.com/> <http://www.broadcastasia.com/> and www.visit-imbx.com

June 28-29, 2010, **GVF Broadband Maritime Europe 2010: 'Innovation in Communications Solutions for the Sea Lanes' (Incorporating 'Communications Systems in Naval Dynamics 2010')**, Strand Palace Hotel, London, United Kingdom, Tel. + 44 (0)1727 884 513 web: <http://www.ukemp.co.uk/BMEu.Ldn.2010/>

The Satellite Technology Guide for the 21st Century

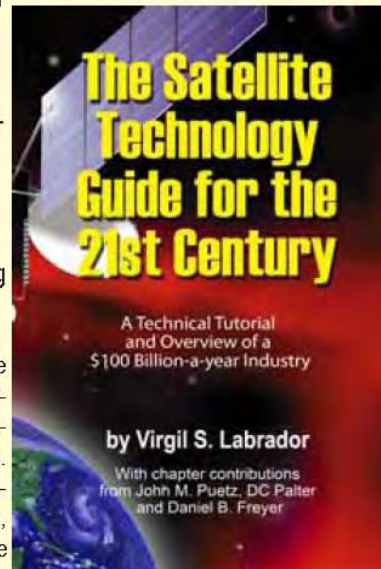
by Virgil S. Labrador
with chapter contributions from
John M. Puetz, DC Palter and Daniel
B. Freyer.

200 pages / 5.5" x 8.5" /
Illustrated with photos, tables and diagrams with appendices.

ISBN: 978-1-60530-421-2

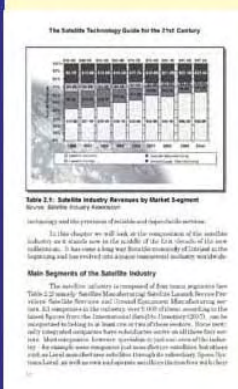
Price: US\$ 25.99 (including shipping and handling)

The Satellite Technology Guide for the 21st Century clearly explains in non-technical terms the basics of satellite communications technology and how it works. This book also provides a historical background of the industry, its current status, market prospects, trends and the future of satellite communications.



Fully illustrated with graphs and tables, the book contains appendices including a glossary of terms and a list of industry resources.

Chapters include: A Brief History of the Satellite Communications Industry; Overview of the Satellite Communications Industry; The Space Segment; The Ground Segment; Satellite Services; VSATs; Satellites and the Internet; The Future of Satellite Communications.



An indispensable guide to the basics of satellite technology and the global industry. No other book in the market today provides a more comprehensive view of satellite technology and the industry in one easy-to-read volume at a very low price of only \$25.99 including shipping and handling.

For more information or to order your copy now, go to: www.satellitemarkets.com/node/34 or e-mail: sales@satellitemarkets.com



Vital Statistics

Broadband Subscribers Per 100 Inhabitants (2009)

Rank		DSL	Cable	Fibre/LAN	Other	Total	Total subscribers
1	Netherlands	22.5	13.7	1.1	0.8	38.1	6 262 500
2	Denmark	22.4	9.9	3.9	0.9	37.0	2 031 000
3	Norway	22.7	7.7	3.5	0.7	34.5	1 645 619
4	Switzerland	23.3	10.0	0.2	0.3	33.8	2 603 400
5	Korea	7.2	10.5	15.1	0.0	32.8	15 938 529
6	Iceland	30.7	0.0	1.3	0.7	32.8	104 604
7	Sweden	18.5	6.3	6.7	0.1	31.6	2 915 000
8	Luxembourg	26.0	5.3	0.0	0.0	31.3	153 172
9	Finland	24.9	4.1	0.0	0.8	29.7	1 579 600
10	Canada	13.2	15.2	0.0	1.3	29.7	9 916 217
11	Germany	26.7	2.4	0.1	0.1	29.3	24 043 000
12	France	27.5	1.6	0.1	0.0	29.1	18 675 000
13	United Kingdom	22.8	6.1	0.0	0.1	28.9	17 742 676
14	Belgium	16.3	11.8	0.0	0.2	28.4	3 041 311
15	United States	10.3	13.8	1.6	0.9	26.7	81 170 428

Source: Organization for Economic Cooperation and Development (OECD)




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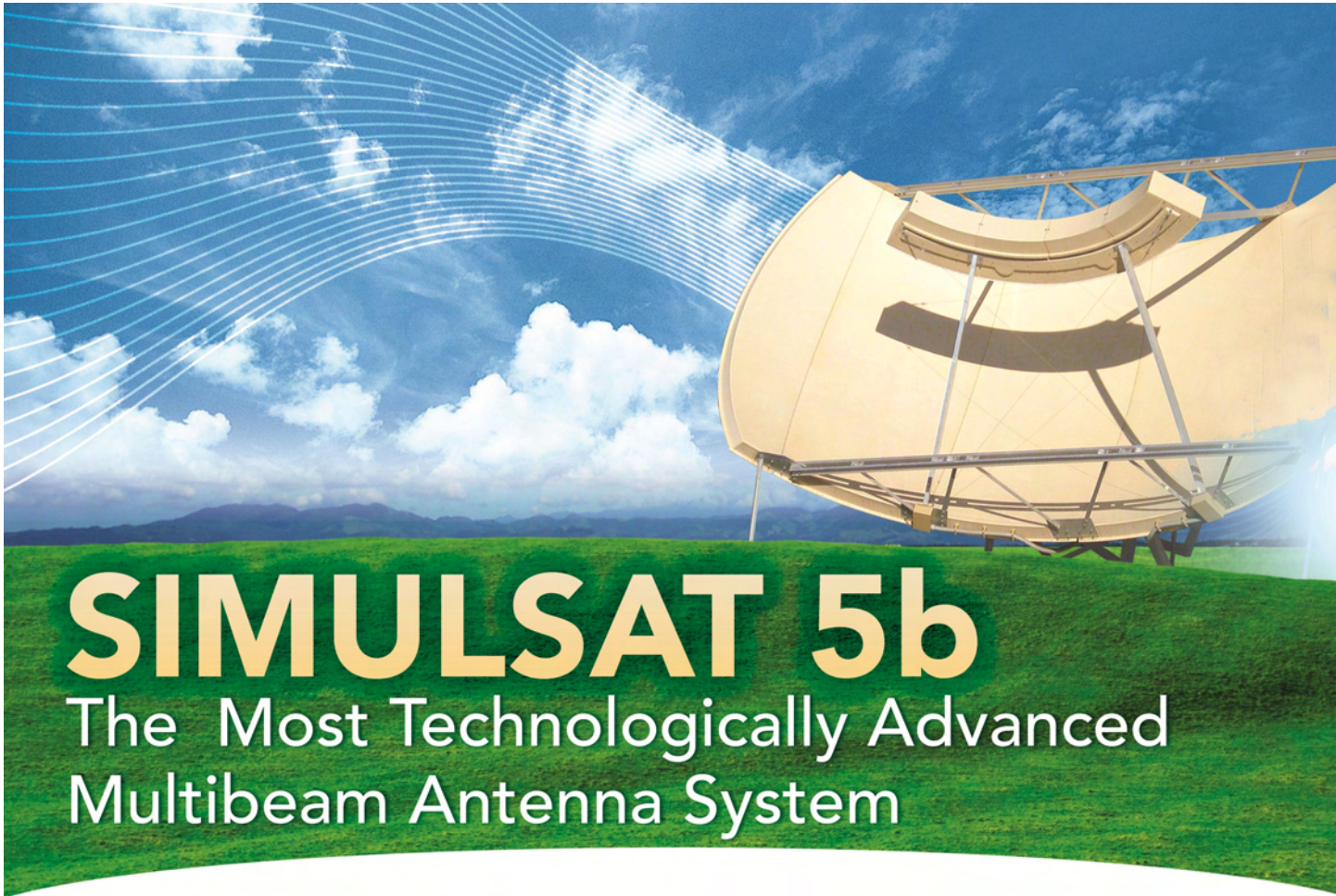
The Satellite Markets 25 Index™

Company Name	Symbol	Price (May 21)	% Change from 2-Weeks Ago	52-wk Range	% change from 52-wk High
Satellite Operators					
Asia Satellite	1135.HK	11.36	0.18%	8.17 - 12.80	↓ 11.72%
Eutelsat Communications	ETL.PA	25.90	1.73%	16.97 - 28.88	↓ 10.32%
Hughes Communications Inc.	HUGH	24.60	2.07%	19.84 - 31.52	↓ 21.95%
Inmarsat	ISAT.L	718.50	-0.42%	491.00 - 819.00	↓ 12.27%
SES Global FDR	SES.F	16.95	3.67%	12.76 - 18.97	↓ 10.65%
Satellite and Component Manufacturers					
Boeing Company (The)	BA	64.56	-3.24%	38.92 - 76.00	↓ 15.05%
COM DEV International	CDV.TO	2.70	-2.53%	2.52 - 4.15	↓ 30.12%
Lockheed Martin Corporation Com	LMT	81.16	-0.14%	67.39 - 87.18	↓ 6.91%
Loral Space and Communications	LORL	37.01	-2.32%	19.27 - 45.45	↓ 18.57%
Orbital Sciences Corporation Co	ORB	16.44	-1.26%	12.19 - 19.63	↓ 16.25%
Ground Equipment Manufacturers					
C-COM Satellite Systems Inc.	CMLV	0.29	-3.33%	0.26 - 0.37	↓ 6.85%
Comtech Telecommunications Corp.	CMTL	29.15	-6.15%	27.50 - 38.39	↓ 24.07%
CPI International, Inc.	CPIL	15.26	16.93%	7.13 - 16.11	↓ 5.28%
EMS Technologies, Inc.	ELMG	15.47	6.03%	12.00 - 23.17	↓ 33.23%
ViaSat, Inc.	VSAT	32.12	-1.47%	22.61 - 36.74	↓ 12.57%
Satellite Service Providers					
Gilat Satellite Networks Ltd.	GILT	5.08	-7.64%	3.20 - 6.25	↓ 18.72%
Globecom Systems Inc.	GCOM	7.84	7.40%	6.13 - 8.63	↓ 9.15%
International Datacasting	IDC.TO	0.2750	17.02%	0.22 - 0.34	↓ 23.94%
ORBCOMM Inc.	ORBC	2.10	-5.83%	1.45 - 3.23	↓ 34.98%
RRSat Global Communications Net	RRST	9.12	-11.88%	8.96 - 13.44	↓ 32.14%
Consumer Satellite Services					
British Sky Ads	BSYBY.PK	31.95	-5.72%	27.63 - 39.07	↑ 2.40%
DIRECTV	DTV	37.23	3.73%	21.47 - 38.56	↓ 3.45%
DISH Network Corporation	DISH	21.03	-1.27%	14.17 - 24.16	↓ 12.96%
Globalstar, Inc.	GSAT	1.58	2.60%	0.61 - 2.00	↓ 21.00%
Sirius XM Radio Inc.	SIRI	1.03	1.98%	0.30 - 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™ provides an investment benchmark to gauge the overall health of the satellite industry.

INDEX	Index Value (April 19)	Percentage Change 2 Weeks Ago
Satellite Markets 25 Index™	1108.75	- 0.55 %
S & P 500	1110.88	- 2.09%

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