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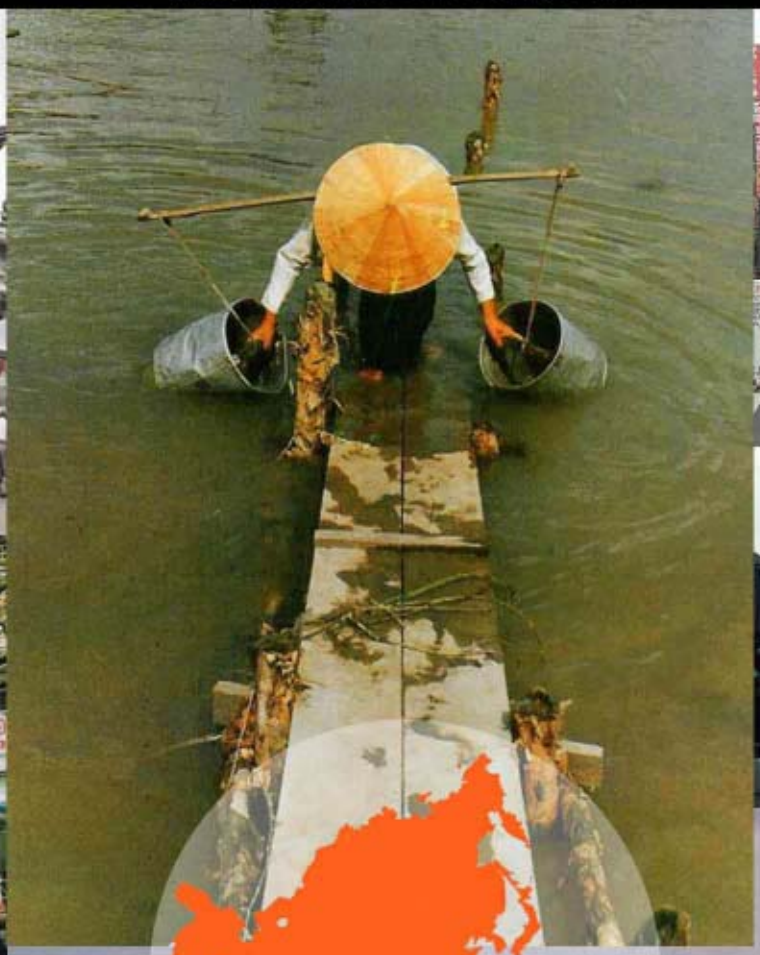

# Asia-Pacific Satellite Market

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# NOTES FROM THE EDITOR

## *The Asia-Pacific Market*

It's that time of year again where the industry makes a beeline to Singapore for one of the major shows, CommunicAsia. Perhaps this year CommunicAsia will have greater significance than in recent years with a modestly recovering Asia-Pacific satellite market. Also CommunicAsia is a unique show as it is actually several shows in one with Broadcast Asia held concurrently. Apart from being the largest telecom show in Asia, it also offers a unique perspective on the convergence of telecoms, IT, the internet and satellites. CommunicAsia has come a long way since it was cancelled two years ago due to the SARS epidemic.

I spent five years in Asia based in Singapore in the '90s. With my extraordinary luck, I came in during the height of the boom in the early 90s and left just in the nick of time when the Asian recession hit in 1998. From all accounts, the Asia-Pacific market is making a huge comeback. Although all eyes are fixed on the highly-touted IPSTAR satellite to be launched later this year.

To help you understand this complex but growing market, our editor based in Manila, Peter Galace provides a good overview in our cover story on the Asian situation--where the opportunities are and who are the major players. We also have an interview with AsiaSat CEO Peter Jackson and Tom van der Heyden writes about a vital niche market for satellite services in Asia in the oil and gas industry.

On another note, much is happening in the launch services sector, with Boeing and Lockheed announcing that they are burying the hatchet and forming an alliance. Bruce Elbert helps us navigate this important segment of the industry in his regular viewpoint article this month.

As the inndustry always looking for new opportunities and markets, the Asia-Pacific region--with its over 3 Billion people and covering almost half of the world's area-- is certainly worth looking at.

Virgil Labrador

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# CALENDAR OF EVENTS

## JUNE/JULY

May 31-June 2, Cologne, Fair Grounds Congress Centrum Ost, Germany
**ANGA Cable Trade Fair for Cable, Satellite & Multimedia**
ANGA Services GmbH
Tel: ++49 (0)228/96 21 890 / Fax: ++49 (0) 228/96 21 895
E-mail: info@angacable.de /
Website: www.angacable.de

May 31-June 2, Long Beach, CA, U.S.A.
**ISCe Conference and Expo**
Tel: +1-310-410-9191 / Fax: 1-310-410-9396
Gina Lerma
E-mail: glerma@hfusa.com,
Website: www.isce.com

May 31-June 3, Almaty, Kazakhstan
**KITEL 2005**
- 12th Kazakhstan and Central Asian International Telecoms & Computer Technologies Exhibition
- 1st Kazakhstan and Central Asian Satellite, Broadband, Wireless and Broadcasting Conference and Showcase
Elena Peredel'skaia
Tel: + 44 (0)20 7596 5205/ 5000
Fax: + 44 (0)20 7596 5208
Email: Elena.Peredelskaia@ite-exhibitions.com
Websites: www.ite-exhibitions.com/
www.caspianworld.com/

June 6-7, Montreal, Canada
**AIB Global Media Business Conference**
Tel: +44-20-8297-3993 / Website: www.aib.org.uk

June 14-17, Singapore
**CommunicAsia 2005**
Victor Wong
Tel: (65) 6233 8662 / Fax: (65) 6835 3029
Email: vw@sesallworld.com
Website: www.communicasia.com

June 14-17, Singapore
**Broadcast Asia 2005**
Jackson Yeoh
Tel: (65) 6233 8633 / Fax: (65) 6835 3029
Email: jy@sesallworld.com
Website: www.broadcast-asia.com

June 23-25, Agricenter International Memphis, TN
**Satellite Expo 2005**
Lee Gilliland
1-877-SAT-SHOW
E-mail: info@satelliteexpo2005.com

July 17-22, University of Surrey, UK
**IEE 20th Residential Course on Satellite Communication Systems**
Lee Gilliland
Tel: +44 (0) 1438 765658 / Fax: +44 (0) 1438 767305
E-mail: jhowe@iee.org.uk

## AUGUST / SEPTEMBER

August 25-28, Beijing, China
**BIRTV 2005**
Steve Walley
Tel: 408-213-3000 / Fax: 408-213-3001
Email: Steve.Walley@xicomtech.com
Website: www.birtv.com

September 5-9, Paris, France
**World Satellite Business Week 2005**
Tel: +33 1 49 23 75 17 / Fax: +33 1 48 05 54 39
E-mail: zaiche@euroconsult-ec.com
Website: www.euroconsult-ec.com

September 8-12, Amsterdam, The Netherlands
**IBC 2005**
Tel: +44 (0)20 7831 6909
Fax: +44 (0)20 7242 8907
Email: registration@ibc.org / Website: http://www.ibc.org/

September 21-22, Sheraton Delfina, Santa Monica, California, USA
**2005 PTC Mid-Year Seminar**
Tel: +1 808 941 3789
Email: my05@ptc.org / Website: www.my2005.org

September 27-28, Dubai, United Arab Emirates
**MENASAT 2005 Satellite Summit to serve as private and public sector forum**
Justin Bambridge
Tel: +44(0)207 0894200 / Fax: +44(0)207 0894201
Email: jbambridge@thecwcgroup.com
Website: www.thecwcgroup.com

# INDUSTRY NEWS

## Boeing, Lockheed Martin to Form Launch Services Joint Venture

**CHICAGO and BETHESDA** – Boeing Co. and Lockheed Martin Corp. have agreed to create a joint venture that will combine the production, engineering, test and launch operations associated with U.S. government launches of Boeing Delta and Lockheed Martin Atlas rockets.

The joint venture, named United Launch Alliance, will reduce the cost of meeting the critical national security and NASA expendable launch vehicle needs of the United States, the two companies said in a joint statement.

"It has become increasingly clear that an alliance of launch capabilities is essential to meet the space communications, surveillance and reconnaissance needs of the 21st century, and to assure access to space," said Lockheed Martin chairman, president and CEO Robert J. Stevens. "This combination will permit our national customers to achieve their mission objectives while reflecting current budget pressures and providing the government with full cost visibility."

"Both of our companies have developed versions of the Evolved Expendable Launch Vehicle (EELV) in collaboration with the Air Force and have flown them successfully," said Boeing president, CEO and chief financial officer James A. Bell. "By joining together we are convinced that we can provide the customer with assured access to space at the lowest possible cost while ensuring enhanced reliability by eliminating duplicate infrastructure and bringing experts from both companies to focus on mission assurance."

United Launch Alliance will be structured as a 50-50 joint venture between Boeing and Lockheed Martin—combining services currently provided separately by Boeing Integrated Defense Systems' Expendable Launch Systems division and by Lockheed Martin's Space Systems Company—for launches of each company's respective rockets. Based upon initial estimates, annual savings to the government resulting from the combination are expected to be approximately $100 - $150 million.

## Proton Launches DirecTV 8 in Kazakhstan

**BAIKONUR COSMODROME, Kazakhstan** – A Russian Proton Breeze M launcher carrying the DirecTV 8 telecommunications satellite was launched from the Russia's Baikonur space center in Kazakhstan on May 22.

***Russia's Proton vehicle carrying DirecTV 8 satellite lifts off at 11:59 p.m., May 22, in Baikonur Cosmodrome, Kazakhstan.*** ***(ILS photo)***

International Launch Services said the Proton vehicle lifted off at 11:59 p.m. local time (1:59 p.m. EDT, 17:59 GMT). It continued its climb through space for nine hours and 15 minutes, after which time the satellite separated from the rocket into an elliptical geosynchronous transfer orbit.

Satellite controllers confirmed that DirecTV 8 is now functioning properly. Over the next ten days, ILS said, the satellite will be maneuvered into a circular geosynchronous orbit, 22,300 miles (36,000 km) above the equator.

The launch had been postponed one day due to a technical issue on the launch vehicle. The launch was originally scheduled for Saturday.

The DirecTV 8 satellite was built by Space Systems/Loral and is based on its 1300 platform. Its loaded weight is 3,710 kilos and has a designated service life of 15 years. It carries both Ku-band and Ka-band payloads and its final operating position is 101 degrees West longitude.

Jim Butterworth, senior vice president, Communication Systems of DirecTV, Inc. said the spacecraft will play an important role in strengthening the company's satellite fleet and the rollout of new services for our more than 14.4 million customers. The satellite will provide support for the expansion of DirecTV's new digital and high-definition services.

The Proton vehicle is built by Khrunichev State Research and Production Space Center, and the Atlas is manufactured by Lockheed Martin. DirecTV 8 is the second spacecraft ILS has launched for DirecTV on Proton. The previous launch was DirecTV 5 in 2002. The Atlas vehicle also has launched two satellites for DirecTV: DBS 2 and DirecTV 6, in 1994 and 1997, respectively.

## INDUSTRY NEWS

# NASA's NOAA-N Satellite Launched After 5 Attempts

**SUNNYVALE, Calif.** – The NOAA-N spacecraft, a Polar Operational Environmental Satellite (POES), was finally launched successfully on May 20 at 3:22 a.m. PDT from Vandenberg Air Force Base, Calif. after five launch attempts.

Lockheed Martin Space Systems Company in Sunnyvale designed, built and tested the NOAA-N spacecraft.

NOAA-N is the latest in the Advanced TIROS-N (ATN) satellite series. All have been designed and built for the National Aeronautics and Space Administration (NASA) by Lockheed Martin since the first Television and Infrared Observational Satellite (TIROS) weather satellite launch in April 1960. NASA manages the spacecraft's launch and the National Oceanic and Atmospheric Administration (NOAA) operates the satellite once in space. Over many years of service, the TIROS satellites have earned the reputation as the workhorses of the Civil Space Earth-imaging inventory.

***A Boeing Delta II rocket successfully launches the latest satellite for the National Oceanic and Atmospheric Administration (NOAA).*** ***(Boeing photo)***

"We are very pleased to have NOAA-N in orbit and healthy," said Dan Hoffman, Lockheed Martin TIROS Program Director. "The Lockheed Martin team has been totally dedicated to providing NASA with a series of satellites that extend NOAA's

ability to provide uninterrupted environmental data products to users."

Following the launch and a comprehensive on-orbit verification period that lasts 45 days, NASA will turn operational control of the satellite over to NOAA. NOAA will operate the satellite from the Satellite Operations Control Center in Suitland, MD, along with the nation's other environmental satellites that it operates.

A constellation consists of two POES satellites circling the planet in nearly north-south orbits. As the Earth rotates, the entire globe, one swath at a time rolls into view of the satellites' instruments. The satellites provide measurements of reflected solar and radiated thermal energy from land, sea, clouds and the atmosphere in the visible and infrared spectrum, atmospheric soundings of temperature and humidity, measurements of global sea surface temperature, aerosol distribution data, ozone concentration data, soil moisture data, and measurements of orbital proton and electron flux.

POES satellites collect data from remote platforms, relay search and rescue data, and also provide direct broadcast of environmental data worldwide. Data from the spacecraft supports a broad range of environmental monitoring applications including weather analysis and forecasting, climate research and prediction, ocean dynamics research, volcanic eruption monitoring and forest fire detection.

## Air Force Selects Lockheed Martin for Development of Space-based Radar Antenna Technology

**DENVER, Colo.** – The U.S. Air Force has selected Lockheed Martin to continue development of the Innovative Space Based Radar Antenna Technology, known as ISAT.

The contract, valued at $19.5 million, is for the next phase of the Defense Advanced Research Project Agency's (DARPA) ISAT project, administrated by the Air Force Research Laboratory (AFRL), Lockheed said. The Air Force will continue development of the ISAT Flight Demonstration Experiment design over the next 14 months, which will take it to the Critical Design Review (CDR) maturity level. Following the CDR, DARPA and the Air Force plan to select a contractor to build and deploy a scale version of the antenna for a one-year proof of technology experiment in low earth orbit.

Tom Scanlan, vice president of Special Programs at Lockheed Martin Space Systems, said its novel design work during the previous phase of the program, developed together with our teammates at Harris Corp., has demonstrated the feasibility of deploying an extremely large, electronically scanning antenna in space that will help enable global persistent surveillance.

The objective of the ISAT program is to create and demonstrate technology for very long space-borne electronically scanning antenna. The demonstration experiment will use an antenna extending about 100 meters (325 feet) in length; the full scale version is designed to extend 300 meters.

Lockheed Martin said the full scale antenna payload would be folded up to about the size of a sport utility vehicle and placed inside a payload fairing atop the launch vehicle. Once deployed in space, the antenna's length would be similar to the height of the Empire State Building. Such a lightweight and lengthy antenna could significantly increase global persistent surveillance coverage.

## South Korea Negotiates with EC on Galileo

**PARIS** – The European Commission said it is seeking European Union's Council approval to start negotiations on a cooperation agreement with South Korea on the development of a Civil Global Navigation Satellite system (GNSS).

EU is currently developing Europe's own global navigation satellite system called Galileo that will provide a highly accurate, guaranteed global positioning service under civilian control. It will be inter-operable with America's GPS and GLONASS, the two other global satellite navigation systems.

"Galileo attracts the interest from countries all over the world. Negotiations with South Korea, the fourth economic power in Asia, represents a new step forward in the international cooperation for Galileo," said Jacques Barrot, Vice-President of the Commission in charge of Transport.

He said the Commission intends to start the negotiations immediately after approval of the Council.

South Koreahas been leveraging space technology and its

applications. It produces and consumes electronic goods and systems for which satellite navigation brings competitive advantages. South Korea uses actively satellite navigation services in areas such as transport, fleet management, science and geodesy.

## Inmarsat, ViaSat to Develop Mobile Satellite Solutions

**LONDON** – Inmarsat is collaborating with ViaSat Inc. to develop new solutions based on the integration of Inmarsat's forthcoming BGAN mobile satellite service and ViaSat's AltaSec family of programmable, HAIPIS-compliant inline network encryption products.

The two companies said they will explore ways to better serve US Government requirements, with specific emphasis on the Department of Defense. They will examine the use of HAIPIS encryption devices, such as the NSA-certified KG-250, to secure the Inmarsat BGAN network.

BGAN, due for launch later in 2005, is the new voice and 492kbps IP data service that will be available on Inmarsat's next-generation satellites – the Inmarsat 4s – the first of which was launched in March.

Inmarsat and ViaSat have already successfully proven the viability of using the ViaSat KG-250 Type 1 IP Network Encrpytor with Regional BGAN, Inmarsat's 144kbps mobile data service currently serving users in a satellite footprint that covers Europe, the Middle East, Northern Africa and parts of Asia.

The joint development team will also ensure that the planned multicast service for BGAN is optimized for supporting IP encryption, and specifically compatible with the High Assurance IP Equipment Interoperability Specification, which is the standard for securing US Government networks.

Michael Butler, COO of Inmarsat, said mobile satellite communications, when combined with NSA-certified Type 1 encryption devices, can be secured to the highest level.

"With our BGAN service launch, planned for later in 2005, we will offer customers unparalleled mobile broadband IP service,

and it is essential that this capability can be similarly assured for government users," he said.

## Aerojet Wins Contract to Develop Propulsion System for Future Space Cargo Vehicles

**SACRAMENTO, Calif.** — Aerojet, a GenCorp Inc. has announced that it won a multi-year contract from NASA's Exploration Systems Mission Directorate to design, build, test and deliver a 600kW Hall Thruster electric propulsion system to power future cargo transport vehicles to the Moon and Mars. Aerojet said the contract, including all options, is valued at $32.4 million.

When the new system is delivered to NASA, Aerojet's work will represent a 30-fold increase in total power and thrust delivered over current state-of- the-art systems, which are approximately 18kW. According to Aerojet, an additional benefit of the company's Hall Thruster system is the significant reduction of propellant mass. The system will require approximately one-third the propellant of equivalent propulsion systems. Industry studies predict a vehicle mass savings of up to 30 metric tons.

"Aerojet is a world leader in the development of new electric and chemical propulsion technologies for space applications," said Aerojet President Michael Martin. "This contract win strengthens Aerojet's position as NASA's supplier of enabling propulsion technology and the propulsion provider of choice for the return to the Moon and further exploration of Mars."

Aerojet is teamed with Lockheed Martin Missiles and Space, NASA Glenn Research Center (GRC) and Colorado Power Electronics, Inc. on the program. SM

# EXECUTIVE MOVES

## Orbital Names Dr. James G. Roche to Board of Directors

**DULLES, Va.** – Dr. James G. Roche, former secretary of the United States Air Force and long-time senior defense industry executive, has been appointed to the Orbital Sciences Corp. board of directors.

He becomes the company's 13th board member, joining a group of nine other highly-qualified non-management directors drawn from the aerospace and defense industry, government service, financial institutions and academia, plus three members of Orbital's executive management team who are on the board.

From 2001 to 2005, Dr. Roche served as the 20th secretary of the U.S. Air Force. As the civilian leader of the Air Force, he was responsible for organizing, training and equipping the service's 700,000 Active Duty, Reserve, Guard and civilian personnel to be prepared to defend America's security and our vital interests around the world. As Air Force secretary, he oversaw an average annual budget in excess of $90 billion.

Dr. Roche worked at Northrop Grumman Corp. from 1984 through 2000, becoming corporate vice president and president of its Electronic Sensors and Systems Sector (ESSS), a $3 billion a year (annual revenues) operating unit. Earlier, he headed Northrop's Advanced Technology and Development Center, its Business Strategy Group, and its Washington Analysis Center as the company's Chief Strategist.

## EADS Board to Approve Future EADS Structure

**AMSTERDAM** – The EADS Board of Directors will combine the election of new CEOs, the approval of the company's future structure, and the nominations for the Executive Committee into one decision.

The European Aeronautic Defense and Space Co. (EADS) said the newly appointed board, headed by re-elected chairmen Dr. Manfred Bischoff and Arnaud Lagardère, met on Wednesday last week immediately after EADS' Annual General Meeting of Shareholders in Amsterdam and agreed to decide on these major strategic issues for the future of EADS until June 1. Until then, chairmen Bischoff and Lagardère will temporarily take responsibility.

The designated CEOs Tom Enders (46) and Noël Forgeard (58) will propose to the EADS Board a new Executive Committee to lead the company's business operations. Following this, Enders and Forgeard will be elected as CEOs of EADS and will assume their new positions for a five-year term. For the time being they remain in their current roles: Enders is heading EADS' Defence and Security Systems Division, and Forgeard is heading Airbus.

Last year EADS generated revenues of € 31.8 billion and employed a workforce of about 110,000.

## CapRock Names Brandon Knicely Engineering VP

**HOUSTON** – CapRock Communications, a provider of global satellite services, has appointed Brandon Knicely as Vice President of Global Engineering & Technology responsible for managing the company's global engineering, technology and support strategies.

"As CapRock continues to expand its global infrastructure and further penetrate new vertical markets, a clear technical vision is paramount," said CapRock resident and COO Errol Olivier. "Brandon's extensive engineering experience, along with his strategic market perspectives, makes him an excellent fit for this important role."

Knicely previously served as executive manager for a privately funded technical consulting firm and vice president and chief technology officer for OnSite Access, a communications service provider. He has held prior executive positions at Networked Systems, Consulting Group, Inc. and IBM. Knicely earned his bachelor's degree in Mechanical Engineering from West Virginia University.

## Globalstar Appoints New General Manager for Europe Satellite Services

**MILPITAS, Calif.** – Globalstar LLC has named Greg Tees as General Manager of Globalstar Europe Satellite Services.

# EXECUTIVE MOVES

Tees will oversee Globalstar's European business operations from Globalstar's Dublin, Ireland office. He will work to sharpen Globalstar's European focus on marine markets and applications, expand Globalstar points of presence and launch remote asset-tracking applications.

"The addition of Greg Tees to the Globalstar team is a major part of the Globalstar commitment to reinvigorate and grow its European presence," said Steven Bell, senior VP, International Sales, Marketing and Customer Care Operations.

## EMS Appoints New Federal Sales Director

**MONTREAL** – EMS Satellite Networks (SatNet), a division of EMS Technologies, Inc., has appointed Bill Hafner as Director of Federal Sales, effective immediately. SatNet also has hired consulting firm Zelinger Associates Inc. as its sales and marketing agent to the U.S. Government.

EMS said both appointments will help bolster the company's government sales capability in North America's open-standard, two-way DVB-RCS hub and terminal market, in which EMS is the market share leader. Last month the Defense Information Systems Agency within the U.S. Department of Defense (DoD) selected EMS to supply a DVB-RCS system.

Don Osborne, senior vice president and general manager, said all branches of the U.S. government, including DoD, need open-standard, commercial off-the-shelf (COTS) technologies to help reduce long-term procurement costs for their IT projects. "Bill's appointment, in conjunction with our new relationship with Zelinger Associates, will help us pursue government IT opportu-

# EXECUTIVE MOVES

nities where DVB-RCS technology can provide strategic advantage," he said.

Hafner joined EMS Technologies in 1999, most recently serving as a product director in EMS Satellite Networks. He brings more than 20 years of experience in the satellite communications market. As an engineer involved in product development as well as sales, his knowledge of EMS Satellite Networks' product line and his understanding of customers' needs and applications will be a strong contribution to this effort.

Zelinger Associates, based in Washington, D.C., provides a range of consulting, marketing, sales, and business-development expertise that matches commercial IT companies to federal government needs. Zelinger has worked with a variety of software and hardware manufacturers and systems integrators to target federal and state government IT opportunities.

## Lockheed Board Elects Robert J. Stevens as Chairman

**BETHESDA, MD,** – The Lockheed Martin Corp. board of directors has elected Robert J. Stevens as chairman of the board, effective April 29, 2005.

Lockheed said the election followed the announcement on Nov. 23, 2004 of Vance Coffman's intention to retire as chairman of the board after 37 years with the company, including seven years as CEO.

Stevens assumes his new duties as chairman of the board, while retaining his position as president and CEO.

Stevens has held a variety of increasingly responsible executive positions including chief operating officer, chief financial officer, and head of Strategic Planning through a career that has included experience in program management, finance, manufacturing, and operations.

Stevens is a Fellow of the American Astronautical Society, and an Associate Fellow of the American Institute of Aeronautics and Astronautics. He serves on the International Advisory Board of the British-American Business Council, and on the Executive Committee of the Aerospace Industries Association.

He is a member of the Council on Foreign Relations, is presiding director of the Monsanto Co., and a member of the board of directors of the Congressional Medal of Honor Foundation. During 2001 and 2002, Stevens also served on President Bush's Commission to Examine the Future of the United States Aerospace Industry.

## ViaSat Names Harvey White to Board of Directors

**CARLSBAD, Calif.** – ViaSat Inc. has appointed Harvey P. White to its board of directors. White is chairman of (SHW)2 Enterprises, an independent business development and consulting firm which he established in June 2004. Previously, White was chairman and CEO of Leap Wireless International, Inc.

ViaSat said White will stand for election to the ViaSat board at the company's 2005 annual meeting of stockholders. The ViaSat board now totals seven members, six of whom are independent directors.

Prior to Leap Wireless, White was a co-founder and a member of the board of directors of QUALCOMM from its inception in July 1985. He was executive vice president and COO until appointed as president and COO in 1992. As COO, he was responsible for the day-to-day operations of QUALCOMM as it grew to be a Fortune 500 telecom technology and manufacturing company.

He left QUALCOMM to head Leap Wireless, which was spun off as an independent company in September 1998. Under White's direction, Leap Wireless' Cricket service grew to be one of the 10 largest U.S. carriers by pioneering the "all you can use for a set price" concept for wireless service.

## NorsatNames William J Coyne III as New CEO; George King Named New Chairman of the Board

**BURNABY, British Columbia, Canada** – Norsat International Inc. has announced that it has appointed William J. Coyne III as President and Chief Executive Officer effective immediately.

Coyne, a former Sprint and Cable & Wireless executive, succeeds Cameron Hunter who resigned last month. Meanwhile, Norsat also named George King as the new Chairman of the Board, who succeeds

# EXECUTIVE MOVES

***Cameron Hunter***

Ken Crump, who also resigned.

Coyne was previously the vice president & general manager at Sprint Communications Northeast Division, one of the largest providers of telecom services in the United States. Coyne also worked with a number of smaller start-up firms.

Coyne has a B.A. from St. Joseph's Univeristy in Philadelphia where he won a presidential scholarship.

The company also appointed Dan Dixon to the board of directors.

With over 20 years of experience in senior management, government and public affairs, business development, private and public financing, international business, investor relations and law, Dixon brings to Norsat considerable multi-disciplined expertise. Dixon's distinguished career includes serving as a founding director of Cambridge Partners, LLC; as the International Counsel, Investment Advisor, and General Securities Principal for the Seattle-based law firm Foster Pepper & Shefelman; and as the head of a subsidiary company of Foster Pepper & Shefelman.

# EXECUTIVE MOVES

Coyne also served as Chief Operating Officer at Cable and Wireless, one of the largest network operators in the world with operations spanning Europe, Asia and the Americas. Coyne was instrumental in spearheading Cable and Wireless's worldwide expansion as a member of the Global Marketing Council.

Coyne also has worked with or counseled a number of smaller, entrepreneurial companies to help drive profitable revenue growth and complete their IPOs. These include a number of pre-IPO companies in the telecommunications, wireless messaging and cellular industries.

## ILC Adds Three Execs to Management Team

**ATLANTA** – ILC has added new leadership in the Sales, Marketing and Operations departments with the appointment of Renee Luke as Director of Operations, Scott Pranger as vice president of Worldwide Sales, and Darrek Porter as director of marketing.

Renee Luke brings more than 20 years of IT management and new business leadership to ILC. Formerly a director at AT&T, Luke received the company's coveted award — the AT&T Leader's Council Award — honoring her contributions in growing AT&T's server and application management business. Luke began her career as a programmer and quickly rose to numerous leadership roles on application development, design and operations teams that provided business application support, electronic messaging, and networked communications.

Scott Pranger is a senior executive with more than 18 years of information technology, sales, marketing and executive management experience. Prior to ILC, Pranger led company operations and organizational strategy for financial services solutions provider Magnet Communications. Pranger held previous sales and management positions with Brokat Technologies AG, S2 Systems, Inc. and Stratus Computer, Inc.

Darrek Porter's marketing expertise will stimulate ILC's internal and external communications programs to achieve bottom-line results. A proven leader in directing strategic marketing initiatives for high-growth organizations in diverse industries, Porter most recently served as vice president of marketing and communications for network management company Oculan. Prior to Oculan, Porter held senior management positions with Atipa Linux Solutions, Missouri Gas Energy and the U.S. Congress.

## Globalstar Appoints Wireless Veteran Greg Tees as General Manager, Globalstar Europe Satellite Services

**MILPITAS, Calif.** – Globalstar LLC has named Greg Tees General Manager for Europe Satellite Services.

Tees will oversee Globalstar's European business operations from Globalstar's Dublin, Ireland office. In his new capacity, Tees will work to sharpen Globalstar's European focus on marine markets and applications, expand Globalstar points of presence and launch remote asset-tracking applications.

"The addition of Greg Tees to the Globalstar team is a major part of the Globalstar commitment to reinvigorate and grow its European presence," said Steven Bell, senior VP, International Sales, Marketing and Customer Care Operations.

## Eagle Broadband Appoints Albert McCabe as VP of Set-Top Box Sales

**HOUSTON,** — Eagle Broadband has appointed technology industry sales veteran Albert McCabe, formerly with Softier, Texas Instruments and IBM, to the position of Vice President of Sales, Set-Top Boxes, effective May 23, 2005.

Eagle said McCabe will assume worldwide sales responsibility for Eagle's complete line of standard and high definition Media Pro IP set-top boxes for the hospitality, residential and enterprise markets. McCabe brings more than 20 years of senior sales and marketing management experience and a proven track record with direct and channel sales of systems, communications and multimedia technology and services to a wide range of markets including hospitality, telecommunications, OEM/ODM and enterprise.

McCabe joins Eagle from multimedia and set-top box provider Softier, Inc., where he led domestic and international sales as Vice President of Worldwide Sales. Prior to joining Softier, he served as Executive Vice President of Sales and Marketing for Accelent Systems Inc., a leading provider of system software and tools for the PDA and Smartphone market. Prior to Accelent, McCabe was Vice President Worldwide Sales for Linux software and development tools provider LynuxWorks, Inc. SM

# NEW PRODUCTS


*New Global IP VSAT Phone for Service Provider HOW IT WORKS*

## New Global IP VSAT Phone for Service Providers

Telematics Business Consultants (TBC) with Viper Networks are launching this quarter a new Global IP VSAT Phone solution for satellite service providers and carriers. This USB Global Phone provides more options for clients that need to call the PSTN from IP VSAT terminals anywhere in the world.

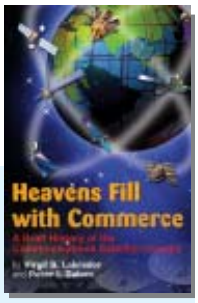
**The main advantages of this VSAT Phone are**

- Global IP roaming with no charge and number Global Portability with voice quality.
- Pre-Paid Services with rates starting with 1 cent per min. (average 3 cts per min. main cities in the world)
- Calls between VIPERHONES is no charge
- Receive calls from a US or European numbers no charge
- Activation and account set up via Internet browser in 3 minutes anywhere in the world
- IP Global VSAT Phone wholesale price start with less than US$ 40.00 per unit (Volume Discount)
- Pay only for the minutes used. No monthly fees, contracts or hidden charges.

**Minimum System Requirements:**
- PC Windows 98 or XP
- Use only 8 Kbps or equivalent of 12 Kbps in space segment base in tests of VSAT IP Platforms
- Easy to use and Install: Customer needs only to plug in phone to PC via supplied USB cable and download dialer software from VIPER website.

Additional information is available by sending emails at info@tbc-telematics.com or via phone at + 1-949-552-6871.

## Satnews Publishers Launches the First Book Covering the History of the Satellite Communications Industry




Satnews Publishers has just released the first book covering the entire history of the commercial communications satellite industry. The book entitled *"Heavens Fill With Commerce: A Brief History of the Communications Satellite Industry"* by Virgil S. Labrador and Peter I. Galace. The 216 page book, filled with photos, illustrations and graphics, covers all the major events that shaped the industry from Sputnik, to the formation of Intelsat and the road to commercialization and privatization of the industry that continues to the present. For more information or to order a copy go to www.satnews.com/products/historybook.htm

## Americom Government Services Unveils SmartPoint System

**WASHINGTON & PRINCETON, N.J.** — Americom Government Services, Inc. (AGS), a wholly-owned subsidiary of SES Americom, launched on Tuesday the SmartPoint system to provide mobile high speed Internet, data, voice and video via satellite service.

The SmartPoint system, AGS said, is an integral part of the CSS Proof of Concept program, which has demonstrated the mission critical role that deployable very small aperture terminals (VSATs) could play for theater based mobile logistics.

"From deployed forces to logistical operations, effective command and control operations require reliable and secure connectivity delivered any place at any time without time-consuming deployment," said David Fields, senior director of Technical Operations at AGS. "The SmartPoint system was created with the non-technical user in mind to achieve a simple method of deployment and operation without special tools or advance training."

## Orbimage Introduces MasterCast in Version 6.0 of Its OrbMap Software

**DULLES, Va.** — Orbimage Inc. has announced the release of Version 6 of its OrbMap software, featuring MasterCast.

The company said Orbimage's OrbMap software and SeaStar Fisheries Informa-

# NEW PRODUCTS

tion Service support commercial fishing captains worldwide by combining the world's highest quality plankton data from Orbimage's OrbView-2 satellite with other meteorological and oceanographic data. Orbimage processes and transmits the derived information products, in the form of digital maps, to fishing vessels worldwide, which the captains then view and manipulate using the OrbMap software on their vessel's personal computer.

By using the SeaStar and OrbMap software, fishing captains can better determine where to search for fish, minimizing search time and reducing high vessel operating and fuel costs, Orbimage said.

MasterCast is an all-new interactive tool within the OrbMap software designed to allow fishing masters and captains to highlight the best fishing grounds based on their own specified criteria.

## Parvus Targets Onboard Computing Applications Requiring Worldwide GSM/GPRS Roaming and Precise GPS Positioning

**SALT LAKE CITY** — Parvus Corp. has announced it will soon release the OrbiTrak GSM, a new PC/104 module for intelligent vehicle and airborne computing systems requiring worldwide GSM/GPRS roaming and GPS positioning.

An ideal solution for demanding mobile communications and global positioning applications (bus, rail, ship, air), the OrbiTrak GSM combines wireless tri-band GSM/GPRS connectivity with a low-power 12-channel parallel-tracking GPS receiver in a single, highly integrated embedded board, according to Parvus. This compact (3.550" x 3.775"), hardened telematics module is built to resist high mechanical stress, thermal shock and extended

# NEW PRODUCTS

temperature operation.

Supporting full interrupt-sharing for all its serial ports, the board includes a 4-channel 16C550 UART with two RS-232 serial ports free for other devices. Board configuration is done using FlexiSet EEPROM board settings, which eliminates banks of interrupts and base address jumpers, according to Parvus.

A 16-bit-wide programmable digital I/O is provided to interface with other low-power digital devices, along with two automotive-level digital inputs to connect to any 12V or 24V digital signals.

## Hughes Certifies Arel Spotlight Conferencing Solution for DirecWay Broadband Satellite Service

**ATLANTA** — Arel Communications and Software has announced that Hughes Network Systems, LLC (HNS) has certified Arel's Spotlight conferencing solution to operate over its DirecWay broadband satellite service.

Areal said the certification means that enterprise customers can use Arel's Spotlight conferencing solution as a value-added application for live and on-demand interactive distance learning over the DirecWay service.

Ken Cohen, assistant vice president at HNS said its enterprise customers can use Arel's network multicast capabilities to manage delivery of video-based training to create a competitive advantage. "By successfully completing testing of its Spotlight conferencing product in our certification program, Arel has assured its customers of a high-quality training experience over our DirecWay satellite service," he continued.

Arel Spotlight's full-featured e-learning conferencing solution addresses all aspects of an organization's training needs and challenges, Arel said. Geo-

# NEW PRODUCTS

graphically dispersed users can now work together in groups, attend webinars and panel discussions, participate in training courses, and have one-on-one meetings with customers or colleagues, from virtually anywhere using desktop systems, laptops or even handheld wireless devices.

## Rockwell Collins Completes Tests with AirCell Satcom

**GENEVA, Switzerland** — Rockwell Collins has successfully tested AirCell's ST 3100 Iridium Satellite Communication System as a qualified data channel for the Airshow 4000 In-Flight Information System.

"The success of these tests means that Rockwell Collins' customers have additional choice and flexibility in selecting a global data service provider for Airshow 4000," said Tim Rayl, senior director, Airshow Systems for Rockwell Collins.


Available with the Airshow Network and Genesys systems since 2003, the AirCell ST3100 Rev. K phone system is now confirmed to be available for the Airshow 4000, delivering custom news, financial, sports, and weather data to the aircraft. AirCell's Iridium-based Satcom provides global access to the Rockwell Collins content databases located within the Member Services Center in Tustin, Calif.

Airshow 4000 is capable of supporting various multimedia applications, video, audio, text and graphics, which are displayed on the aircraft's cabin and flight deck monitors, according to Rockwell. Real-time flight information from the aircraft's long-range navigation and air data systems is processed by the system and the appropriate maps SM

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# COVER STORY

## Asian satellite companies:

# Waiting for the Cavalry to Come Charging

**By Peter I. Galace**

On a wasteland strewn with victims of transponder overcapacity and the Little LEO fiasco, that hardy band of survivors from the battered commercial satellite industry hunkers down for another battle against "The Horde."

They don't have long to wait. Assaulting them from all directions are their old adversaries: cheap fiber; terrestrial bandwidth oversupply; savvy cable mass marketing; regulatory hurdles; rain attenuation.

The battle is vicious. But the satelliteers are on the losing end. They give ground. But just when all seems lost, a shout of hope above the tumult of imminent defeat:

"Here comes the cavalry, boys! We're saved!" A wild yell of relief goes up.

And charging over the horizon in the nick of time is the cavalry (aka the U.S. Department of Defense), scattering The Horde and dispensing multi-million dollar transponder leases that breathe life—and revenues—back into the wounded commercial satellite industry.

Pardon the old-fashioned melodrama but it's a case of life imitating art in today's satellite communications industry. Right now, no one doubts that US military spending for its war on terror is the largest single factor in the rebound of the commercial satellite industry as a whole.

For non-US players, however, the bounty from the military-led recovery hasn't been the flood tide they expected.

And Asia's satellite operators aren't raking in tons of dollars from US defense spending. They've had to rely on their bread and butter revenue generators—broadcasting and telecommunications—to tide them over 2004, which is widely dismissed as another year of flat growth.

Northern Sky Research concurs and said the industry grew modestly in 2004 in both supply and demand for satellite capacity.

"The region as a whole exhibited no major developments in terms of applications that drove revenue streams above historical levels within say a three-year period. The major satellite players with the largest fleets continued to account for the bulk of demand in the video markets while the smaller players continued to tap niche markets in terms of applications and regions or countries they serviced," said Jose del Rosario, senior analyst & regional director of Asia-Pacific.

He noted that the bread-and-butter for the industry remained the video markets with growth in that specific sector largely dominating demand and revenue growth for the entire Asia Pacific region.

"The price competition that has been widely talked about has really been of little consequence since the video markets that tend to exhibit long-term contracting with satellite operators, have exhibited stable transponder pricing. Video customers are even paying a premium over the regional price average in order to achieve long term reliability and stability."

As for 2005, Northern Sky sees the year as just another year. Del Rosario believes 2005 should be business as usual due to the relatively stable video markets with some potential growth in terms of equity interest. He pointed to ambitious programs that should come on line in 2005, including the long delayed launch of the iPSTAR-1 Broadband Internet Satellite and Japan's MBSat beginning service this year.

## COVER STORY

"MBSat in particular looks to be a promising service given the installed base of subscribers it recorded within the first months of service in South Korea. Whether MBSat's success can be replicated outside the Japanese and Korean markets remains to be seen."

***Northern Sky's Jose del Rosario***

On the other hand, iPSTAR will be watched closely from both the technical side as well as market acceptance in the broadband space. The much anticipated service launch has generated a lot of interest as well as impatience in the region given the delays that program has experienced.

"Should iPSTAR and MBSat succeed in 2005, private equity which has had a tremendous influence in the United States and to some extent in Europe, will begin to play a more active role in Asia in the coming years. Then we could begin to see some real changes and impact in our region," del Rosario said.

Asia, however, will remain a market dominated by video. Del Rosario emphasized that whoever controls the video markets, controls the Asian satellite market.

"Unlike the North American market where government/military use has benefited the industry in very profound ways, there is no new application or customer segment that we at Northern Sky Research see will heavily impact the marketplace at least for 2005."

### Regional Players

Continuing to tap into broadcasting and telecoms seems to be the way to go for a number of Asia's leading satellite companies.

## COVER STORY

Asia Satellite Telecommunications (AsiaSat), a leading regional satellite operator and an affiliate of SES Global, reported double-digit revenue growth in 2004, a rise in net profit and overall satellite utilization rate. Turnover amounted to US$129 million in 2004 compared to $115 million in 2003, a 12% increase. Profit improved 2% to US$55 million as against US$54 million in 2003.

AsiaSat, however, said revenue growth would have been flat were it not for the early termination of a transponder utilization agreement. It expects 2005 to be marked by limited growth but will see the introduction of some new channels and services. It expects transponder prices to stabilize since customers are beginning to realize that certain satellites are better at providing what they require than others.

SingTel Optus, an affiliate of Singapore Telecommunications Ltd (SingTel), reported a rise in satellite revenue by 4.8% to $42 million for its year ending March 31, 2005. It operates four satellites with two on order.

Shin Satellite Public Company Ltd (ShinSat) earned revenues of $31 million for the first quarter of 2005 and net profit of $5 million. The company plans to spend some $100 million to replace its Thaicom 1 and Thaicom 2 satellites that are to retire in 2008 and 2009. But of more interest to the industry is ShinSat's iPSTAR-1 broadband Internet satellite that, if commercially successful, might usher in the era of Ka-band satellites.

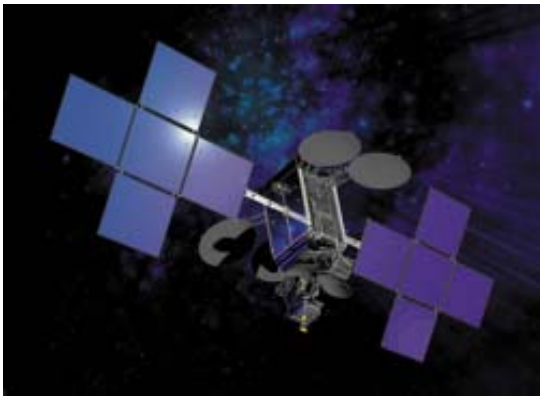
Another of Asia's top 10 satellite companies, APT Satellite Company Ltd, however, reported a loss of $36 million compared to a loss of $39 million in 2003 because of transponder overcapacity and weak demand. It saw no signs of transponder market improvement because of weak demand.



Japan's JSAT Corporation, Asia's largest satellite company in revenues, reported lower revenues of $196 million for the six months ending September 2004 compared to $202 million for the same period in 2003 due partly to the cancellation or expiration of transponder contracts. JSAT, however, said the 2004 revenue was higher than forecast. Net income dropped to $248 million from $272 million.

The varying fortunes of five of Asia's top 10 satellite companies tend to reflect the results of a weak market burdened by excessive C- and Ku- band transponder capacity. About three-fourths of the market is broadcast where demand remains flat but demand for telecommuni-

## COVER STORY



***Thailand's Shin Satellite iPSTAR broadband satellite is to be launched in July***

cations, especially mobile communications, is expected to take up the slack left by the aging of the broadcast market.

Clearly the cavalry (or satellite telecommunications) hasn't come to the rescue of Asian satellite companies—yet. But this situation may change since US military operations expected to continue in Iraq and Afghanistan for the rest of the decade.

### Iraq and Afghanistan Wars Drive Satellite Demand

International satellite operators, however, are raking it in from the wars in Iraq and Afghanistan and the consequent massive satellite bandwidth grab by the U.S. DoD to support ongoing military operations. Northern Sky Research says world satellite communications revenue growth is being driven largely by U.S. military demand and will not be satisfied before 2020.

The continuing U.S. presence in the Middle East and the demands of homeland security should continue to drive demand and sustain satellite industry revenue growth. Northern Sky believes that military use will generate 46% of all revenues from 2002 to 2007 as against 39% for commercial satellites and 15% for science satellites.

That's good news for the commercial satellite industry—and for any industry with a similar lock on short-term profitability. Global satellite companies operating in Asia such as Intelsat and Inmarsat are cashing in on the huge military appetite for satellite bandwidth.

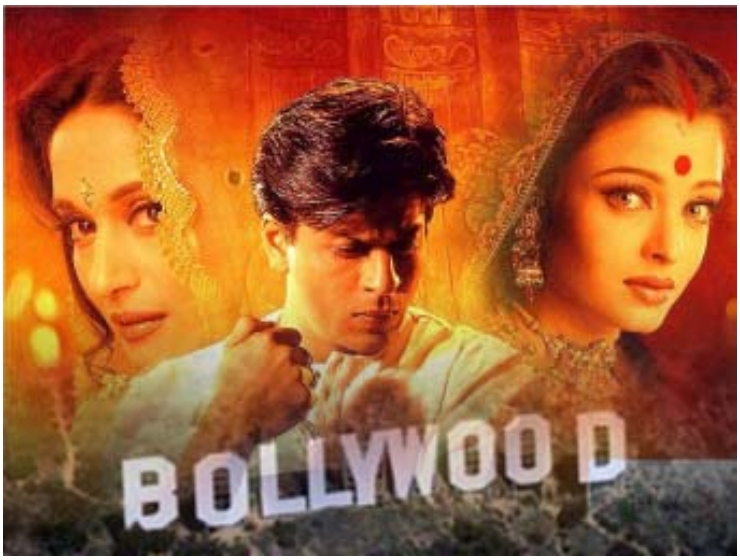
The suddenly upbeat outlook for the worldwide satellite services industry was evident at the 3rd annual International Satellite and Communications Conference and Expo (ISCe) in 2004.

Respondents to a survey conducted during the conference confirmed that new business growth over the past 12 months came from the U.S. military and that the greatest revenue growth over the next three years is expected to come from military services.

Of the respondents, 69% predicted more investments over the next three years. Revenue growth is expected to come from satellite services, followed by ground equipment manufacturing and satellite manufacturing.

In satellite services, the growth leader is expected to be broadband, along with direct-to-home (DTH) television, satellite radio and mobile satellite services. India and China continue to

## COVER STORY




***India's cable and satellite growth is also driven by that uniquely Indian phenomenon called "Bollywood."***

dominate the cable and satellite market by their sheer strength of numbers.

Asian research firm Media Partners Asia Ltd (MPA) said the leading cable and satellite markets according to subscriber numbers were China (100 million subscribers); India (48 million); Korea (12 million); Japan (8 million) and Taiwan (5 million).

### DTH Subscribers Rising

As for DTH, subscribers rose 19% in 2004 to reach 8.4 million. MPA said the continued penetration of subscription-based TV services and growing viewership of cable and satellite TV channels will increase the market for pay TV advertising.

In 2004, the leading DTH markets were Japan (3.3 million subscribers), South Korea (1.6 million). Malaysia (1.5 million), Australia (890,000) and New Zealand (490,000). And it's not only in Asia where DTH is king. Research firm Euroconsult says 13 of the 45 geostationary satellites due to launch in 2005 and 2006 are dedicated to DTH, digital radio broadcasting, and fixed/mobile broadband services.

MPA estimates that video services will provide the bulk of revenues for the broadband pay TV industry. It projects total video revenues (subscription and advertising) as rising from $16 billion in 2004 to some $30 billion in 2010 and 40 billion in 2015. In the long term, video services are seen accounting for almost 90% of broadband pay TV industry revenues.

In addition, new commercial satellite services such as DMB (Digital Multimedia Broadcasting) services via satellite and broadband via satellite hold the brightest promise for Asia's satellite companies. Satellite enabled CANs or captive audience networks (also known as digital signage) are seen as a prime driver of future satellite growth in Asia. GlobeCast, a subsidiary of France Telecom, is already making a play for CANs in Asia.

By 2015, MPA estimates that the leading revenue markets will be Japan ($15 billion), China ($11 billion) and India ($11 billion). By 2015 also, the leading digital cable and satellite markets in terms of total subscribers will be Japan (21 million), China (16 million) and India (15 million).

All three countries, incidentally, are Asia's three leading satellite powers. China's satellite industry is a mature business, with a history dating back to the 1970s. Today, China is poised for stable growth and is looking to leapfrog ahead with its third-generation satellites.

Northern Sky Research projects transponder demand for broadband, narrowband VSAT and other services will more than double in the next five years across all of East Asia including China and India. The dominant video services sector, which surpasses all others combined, including telephony and carrier services in the region, is seen expanding by 40%.

India's cable and satellite growth is also being driven by that uniquely Indian movie industry phenomenon called "Bollywood."

Analysts believe 25% of world entertainment is going to be generated from Asia, with most of this coming from India and China. India's entertainment industry is expected to grow 18% and China at 25%. Broadband will be the key driver for Asia while DTH will be a major growth driver for India. It is estimated that cable and satellite reaches more than 15 million homes in India. India's regulatory environment, however, is cause for concern but is seen as vital to the growth of the satellite and entertainment industries if changed for the better.

For Asia, Northern Sky is especially upbeat about the prospects for satellite broadband, saying that revenues of $2.7 billion in 2004 were to grow to $4 billion in 2009. Driving this 7.8% CAGR will be broadband Internet access via satellite. It believes that satellite Internet access might well become the satellite industry's first truly mass market service capable of competing against DSL on price.

But the future of satellite and Internet broadband hinges on the success of Ka-band satellites. Of the three planned—Spaceway, WildBlue and iPSTAR-1—only the latter two remain in the running.

But the attention of world telecoms is now focused on Shin Satellite plc

# New opportunities for Asia's satellite industry in the next 3 to 5 years

The next five years for Asia's satellite industry should herald interesting developments, including new uses for old services, an industry boost from the 2008 Olympics and higher prices for C-band.

Northern Sky Research believes video markets will remain relatively stable with some potential growth in terms of equity interest. In the next three to five years, Northern Sky expects a China based DTH service, either ChinaSat or SinoSat, to emerge. Also, the 2008 Olympics could have a major impact on HD worldwide given the large amount of HD programming this event is expected to generate.

It also sees mobile video and satellite technology's incorporation in terrestrial 3G/4G to open up new opportunities for the industry. In all these, it is the broadcast component of satellites that will provide the most compelling value proposition for customers.

AsiaSat says satellites will continue to play a significant role in content delivery. In the coming years, as quality increasingly becomes a market differentiator, it expects to see the development of new types of video content being delivered by satellite such as HDTV and Digital Cinema.

AsiaSat believes Asia will emulate the U.S. and Europe and will see increased live news events being transmitted to the studios via satellite.

Real-time news and sports events will be delivered to 3G mobile or other handheld devices and the distribution of this content will be via satellite to the cell sites. AsiaSat says it is already carrying some occasional HD traffic and content for mobile devices.

In urban areas, AsiaSat sees DST or ADSL provided over the telephone network as the bulk provider with satellite service serving enterprise customers that require large capacity links and they do not have good quality telephone service.

In rural or outlying areas without telephone service or areas where the telephone lines do not support ADSL, AsiaSat sees a market need for satellite broadband but the ability of customers in these areas to pay for the service is an important factor. For these areas a bundled telephony/internet product to a local community center may provide a more economic solution.

Demand could well pick up in the second half of 2005, according to AsiaSat. In terms of pricing, the revived demand will result in higher prices for C-band, but for Ku-band there is still oversupply in certain markets and this could hold prices down. SM

(ShinSat) multi-million dollar baby: the $400 million iPSTAR-1 Broadband Internet Satellite. To launch this year after a two-year delay, iPSTAR holds the promise of low-cost, high-speed satellite broadband service for the Asia/Pacific. It will also make two-way broadband services accessible in Asia.

The market success of iPSTAR will deliver a powerful message that Ka-band is no longer a non-starter but is a service capable of significantly changing the fortunes of the commercial satellite industry. The market is there: Northern Sky projects 1.7 million broadband satellite subscribers by 2009 from 843,000 in 2004. Serving that market, however, will be a tall order for an as yet unproven technology.

Broadcasting will continue to dominate Asia's satellite industry until the next decade. But telecommunications is bound to increase in importance, especially with the continuation of the US-led war on terror.

Satellite telecommunications has long played second fiddle to broadcasting. It rise in importance—which is bound to occur—may yet give Asia's satellite industry two firm legs to stand on. SM

Peter I. Galace is editorial director of Satnews Publishers. He has written extensively on the telecommunications developments in Asia for numerous publications. Currently he is associate editor of Satnews Daily and Weekly editions, and art and production editor of the International Satellite Directory and the monthly e-zine, Satmagazine. He can be reached at peter@satnews.com

FEATURE

# SES: "More $/€ to come"

**By Chris Forrester**

Investment bankers Morgan Stanley have taken a close look at SES Global, following on the May 6 news of SES' announced plan to buy in 9% of its own stock. Morgan Stanley senior analyst Sarah Simon suggests there's likely more cash to come to shareholders, although she also says that SES' two core investors, the Luxembourg state and General Electric, might also have to give up some equity if the free float is to stay in equilibrium.

But this is only part of the story. It seems, at least according to Morgan Stanley, that SES is in for a buoyant couple of years, with Americom and Astra, its two "anchor" brands, being well positioned to take advantage of a market renaissance.

A few weeks ago, SES Global presented at the Morgan Stanley Media & Communication event in Washington, and evidently delivered a highly bullish picture of its trading position, in particular with reference to SES Americom's activities. It emerged that Americom is achieving some 85% penetration of the US cable market with its HD Prime slot, and expects to be at 90% by the end of this year. Moreover, the very real capacity shortages in the US and Europe means SES now has real opportunities to start ramping transponder prices up. Morgan Stanley's revenue forecast picture for SES Astra, for example, is impressive. Its satellites at 19.2 deg E, now mainly transmitting to Germany and France, can expect to generate an extra €90m over the next 4 years (compared to 2004), and at 28.2 deg E where Astra transmits BSkyB's UK and Ireland channels, revenues will expand €70m. Even allowing for modest growth on Astra 4A's bundle of transponders into Africa (from just €1.7m this year to €12.8m in 2008, and a phasing out of the 24.2 and 5.2 deg E slots, Astra's gross revenues will expand from last year's €663.6m to an impressive €868.6m during 2008.

Morgan Stanley, in its May 16 report, says: "We believe that a share buyback can drive further value appreciation as it should result in a lower cost of capital." The report suggests that the share buy-back could affect SES' two major shareholders: GE Capital and the Luxembourg government, who might trim their stakes. An alternative might be for SES to significantly increase its dividends to shareholders. "If the latter, we believe SES Global could offer a 2006 dividend yield of more than 15%," say the bankers.

Meanwhile, SES has green-lit the acquisition of Astra 1M. The new satellite is being fast-tracked as a fleet back up, with a primary mission to replace to replace Astra 1H and provide in-orbit backup capacity for Astra fleet at 19.2 deg East. Astra 1M will have 32 active Ku-

**SES Global's African magic bullet**
**Key to SES' new thinking is WorldSat 2 (originally known as AMC-12), and now partly renamed Astra 4A, at 37.5 deg West. SES partner company Star One of Brazil is taking 18 transponders that serve South America, and this portion of the craft will be marketed as Star One C-12. Astra 4A/WS2 is a 72-transponder C-Band giant, built by Alcatel Space and uses their Spacebus 4000 configuration. The craft was launched in February.**

## SES utilisation*

| | 2005 | 2006 |
|---|---|---|
| Astra at 19.2 deg E | 85.5% | 89.5% |
| Astra at 28.2 deg E | 96.5 | 96% |
| NSAB Euro-footprint | 75% | 80% |
| HD Prime (Americom) | 90% | 95% |

**Data: Morgan Stanley*

# FEATURE

## SES board changes

At a May 6 Board Meeting SES Global made some significant changes to its Board structure, reducing the overall size from 21 members to 18, but at the same time improving the expertise and professional independence of the Board's structure. In comes old SES hand Marcus Bicknell, former New Skies chairman Terry Seddon and Jacques Espinasse, formerly Vivendi-Universal's CFO, and Gerd Tenzer, a former main board director at Deutsche Telekom. The new blood is seen as improving corporate governance as well as a higher degree of independence to SES' top-level supervision. René Steichen remains as Chairman of the Board

band transponders. Astra's president and CEO Ferd Kayser says the object of the exercise is to guarantee absolute safety for the fleet ahead of the planned launches of Astra 1KR and 1L. "The procurement is expected to include the option to interrupt the build programme and to resume the build at a later date more closely aligned to the replacement of Astra 1H capacity," said a statement. "By slightly advancing the procurement of Astra 1M, we will also protect the timing of the move of Astra 2C to 28.2 East, to secure the growth in the buoyant UK and Irish markets," said Kayser.

Then there's SES Americom, which is also changing its attitude internationally. First, a year or so ago, Americom was going to manage its widely-deployed international fleet itself. Then, the non-US assets would be spun off into a new company, WorldSat (with Andreas Georghiou as CEO). Now the plan is to bring Americom's European arc of assets – including the Middle East and Africa - under Astra's control with most Asian assets and sales under the care of Peter Jackson's team at AsiaSat.

Americom/Astra firmly has Africa in its sights, and has Steve Rich looking after Africa from his Johannesburg base. It is early days, but evidently the signs are all very positive. SES' secret weapon is SES Global's acquisition, via Americom, of Verestar last year (the purchase closed Dec 1). Verestar's 4 Earth Stations (Alexandria, VA, Brewster, WA, Holmdel, NJ, and Leuk, Switzerland) and their African traffic, by and large now carried by PanAmSat, will switch to Astra 4A when contract terms permit. "The first traffic will start appearing as soon as June," says an SES insider, hinting that the traffic could soak up anything between 6 and 12 transponders. "We can now provide very

# FEATURE

easy connectivity between almost anywhere in Africa to a USA hub." SES sees its African clients welcoming Astra 4A's higher-power C-Band output.

But what about future revenues for Americom and Astra? Again we can turn to the detailed Morgan Stanley report. Morgan Stanley suggest that Astra's current average transponder rentals stand at €4.3m a year for 19.2 deg (for a current manifest of 101 transponders), and bargain basement €3.7m for 28.2 deg East (and 54 transponders) which serve the British Isles. These revenues will grow, with 19.2 transponder rates rising by €100,000 next year, and the same for each of the next few years until the slot is using 112 transponders at €4.6m p/a each. The second position, 28.2 deg E, will be slower to rise in per-transponder value, especially given the longer-term rates negotiated by BSkyB, and not showing much uplift until 2008 (and then only to €3.8m a year). The bank predicts Astra's 28.2 orbital position will grow in terms of transponder utilization from today's 54 to 69 in 2008. Americom's transponder rentals typically range from €1.3m-€1.4m per annum.

Add in Americom, NSAB, AsiaSat and its other part-owned satellites and other investments, and the revenue picture grows from last year's €1.082bn to a healthy €1.6bn during 2008. As part of a wider picture, Morgan Stanley acknowledges that SES has to maintain a flexible attitude to capital expenditure especially in regards to satellite launches, a risk-laden process unfortunately, where little is certain. Currently SES guidance is that Astra's recent RFP for Astra 1M will go through to procurement and launch, even if there remains a possibility that the satellite is held as a 'ground spare'. This gives Morgan Stanley three potential outcomes:

1: Capex guidance is lowered for 2007 and 2008, because Astra 1KR and Astra 1L are both launched successfully, and 1M is put on ice;

2: Revenues are higher than we forecast from 2008, because 1M is launched and begins to capture new business alongside that generated by 1KR and 1L.

3: 1KR or 1L fails, 1M is therefore launched and capex and revenues are unaffected. SES receives insurance compensation for the lost satellite.

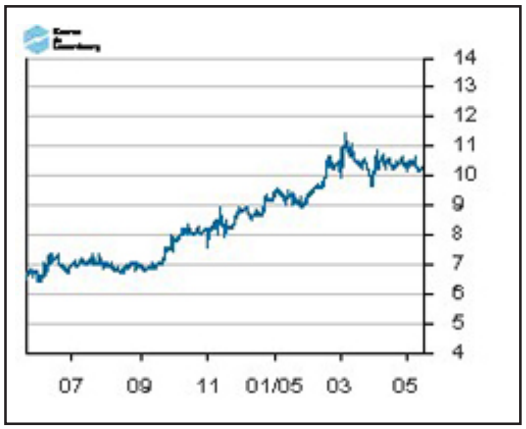
"One of these alternatives is correct, the problem is that we do no know which one. What is clear, however, is that our forecasts are too conservative in this respect," states Morgan Stanley. "In our view Astra 1M is more likely to be a source of medium and longer-term earnings upgrades. For given the strong demand in Europe at present, we would expect that 1M will be launched, perhaps in 2008, and that, as discussed earlier it will generate revenues that are not currently in our estimates."

*SES Global Headquarters in Betzdorf, Luxembourg. (photo courtesy of SES Global).*

# FEATURE

SES is reportedly in discussions with Echostar to move Echostar 4 (already declared a total loss by insurers) to Mexico's 77 deg West slot ahead of a July 10 FCC deadline, in order to secure the orbital position for SES-backed QuetzSat.

SM




## SES Astra: Revenue Forecasts (€m)

| Year to December 2004 | 2005e | 2006e | 2007e | 2008e |
|---|---|---|---|---|
| 19.2 | 426.2 | 437.4 | 463.4 | 490.2 |
| 512.4 | | | | |
| 28.2 | 190.5 | 197.2 | 199.1 | 229.3 |
| 260.5 | | | | |
| 23.5 | 27.7 | 29.6 | 31.9 | 34.5 |
| 37.3 | | | | |
| 24.2 | 2.6 | 9.4 | 14.3 | 8.5 |
| - | | | | |
| 5.2 | 0.2 | 0.1 | - | - |
| - | | | | |
| Other | 16.5 | 17.0 | 17.5 | 18.0 |
| 18.4 | | | | |
| DPC* | - | 22.0 | 22.9 | 23.8 |
| 24.7 | | | | |
| Spot Beam | - | 0.2 | 0.8 | 1.7 |
| 2.5 | | | | |
| Astra 4A - | - | 1.7 | 8.3 | 11.1 |
| 12.8 | | | | |
| Total ASTRA | 663.6 | 714.5 | 758.1 | 817.1 |
| 868.6 | | | | |

*Note: Astra's Digital Play-Out Centre, net of inter-company*
*Data: Morgan Stanley*

London-based Chris Forrester, a well-known broadcasting journalist is the Editor for Europe, Middle East and Africa for SATMAGAZINE. He reports on all aspects of the industry with special emphasis on content, the business of television and emerging technologies. He has a unique knowledge of the Middle East broadcasting scene, having interviewed at length the operational heads of each of the main channels and pay-TV platforms. He can be reached at chrisforrester@compuserve.com

FEATURE

# The Asian Economy, the Oil and Gas Industry and Satellite Communications: What's the Connection?

**By Tom van der Heyden**

In the February 2005 issue of SatMagazine I wrote an article on how Wi-Fi and satellite communications are teaming up to deliver the "last mile", and doing so cost effectively with commercially off-the-shelf products. With the focus of this month's issue on satellite communications in Asia I decided to write about how much satellite communications in the Asian energy industry affects us all.

Most of us are aware that the industrial revolution has grown exponentially in China over the last decade and with this growth has come an insatiable appetite for hydrocarbon-based energy (oil & gas). Considering the rate at which Asian consumption is increasing and recognizing that the nations which require petroleum as the life blood of their industrial development will take serious and long term moves to invest in and protect access to petroleum, Asia is not to be found sitting on the sidelines when it comes to the race to find, develop, and deliver this hydrocarbon lifeline.

The average American consumes 25 barrels of oil a year. In China, the average is about 1.3 barrels per year; in India, less than 1 barrel. As the 2.4 billion Chinese and Indians move toward improving their living standards, and their industrial demands on energy increase, they're going to want (need) more petroleum — likely more than can be produced. Already Japan and China are the world's largest consumers after the USA.

***Satellite communications is the most effective way to link various vessels and rigs in the oil and gas industry.***

India now ranks sixth in the world in terms of petroleum demand, of which 70 per cent is met through import of crude oil. By 2010, India is projected to replace South Korea and emerge as the fourth-largest consumer of energy, after the United States, China and Japan.

At an April conference on energy in Beijing the Chinese government estimated that, even if all their efforts to develop hydrocarbon and alternative energy sources go well, by the year 2020 China will need to import 60% of its energy needs. The problem is not going away, it's only growing.

One of the more important tools in operating and improving the efficiency of the hydrocarbon/ petrochemical based energy industry is satellite communications and its ability to reach out to those remote locations with communication services befitting a king. Satcom addresses those issues which make industries such as oil & gas, mining, and maritime operations difficult to serve.

# FEATURE

## Energy Industry Requirements Served by Satellite Communication Based Solutions

**Remote, Harsh, Unfriendly Environments are 'the Norm'.** The five major oil and gas exploration and production companies spent an average of 62% (using 2002 figures) of their annual budget on exploration. This money went into exploration at sea, in remote deserts, in places so cold that they have to heat up the oil for it to flow. None of these locations are served by class five switches or fiber optics. Its either satcom or nothing.

**Mobile, Transportable, and at the Same Time High Reliability.** Oil and gas exploration teams on land and at sea are constantly on the move. Moving can be measured in days, weeks, and months while in some cases a team may stay in one location and grow into a small city of several hundred if a sizable oil/gas field is located. In all cases, reliable mobile communications delivering substantial amounts of data (mega & gigabytes daily) from remote sites to HQ for analysis is a critical part of the operation. The 'business of energy' demands efficiency in being able to analyze vast amounts of data and make decisions as to the next step in a given exploration with a minimum of delay. With daily exploration and drilling costs ranging into the hundreds of thousands of dollars, an exploration operation can not afford to waste time waiting on the results of a test hole evaluation nor can they afford to move on, only to find out a week later that they have to return to an already surveyed site to expand a survey due to corrupted data or a decision to carry out additional explorations at what 'appears' to be a potential favorable site.

**Global Real-time Networks.** Today's energy companies have operations at sea, and on land, in as many as 15 different countries at the same time, in various stages of development, all requiring voice, data and internet access, typically over a secure network (VPN), in real-time, with availability measured in the 99.99 range. Real-time networks ensure that everyone in a given operation or logistics environment is making decisions based on the same information. With the investment required and the high stakes involved, secure networks, including to the most remote and extreme locations, must be secure. Only satellite communications can deliver the connectivity and efficiencies required.

# FEATURE

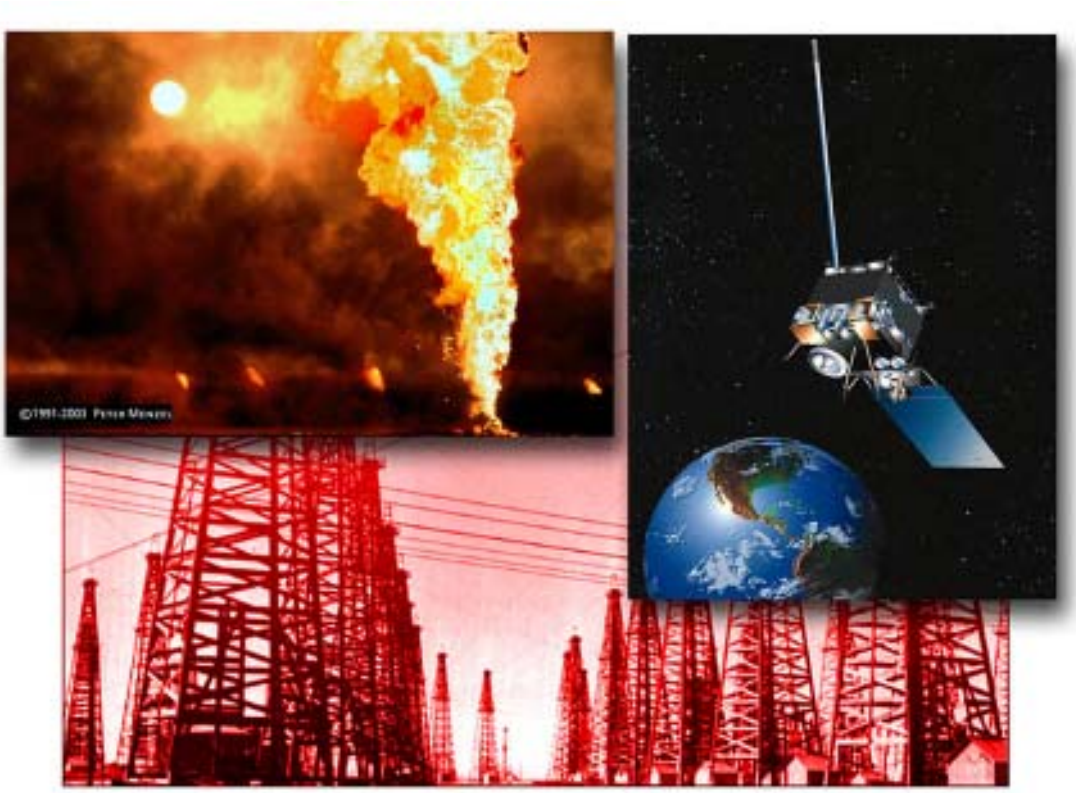
**Fewer Experts and More Operational Locations Demand Centralized Expertise.** As the number of experts in exploration decrease over time and the number of exploration sites increase, centralized and pooled (including virtual pooling) is required. It has been a long time since a seasoned engineer could be found on every site. Today by example, engineers in Houston are monitoring; the depth and angle of drilling, drill temperature, back-pressure, and many other parameters, in operations off the coast of Brazil, in Yemen, and in the Sakhalin Islands simultaneously – all via satellite.

**Health and Welfare.** Today surgical operations are being carried out by 'ship's doctors' in remote locations, some on off-shore oil platforms, some remote oil fields, all via satellite links which inter-connect medical experts from multiple fields and multiple locations together in a virtual operation room, helping to maintain the health of those working far from home. Cable television, email and family communications are provided by satellite to operations which may have as many as 400 employees, from 25 different companies, working months at a time in isolated regions.

**Security.** All major energy operations must consider security from several perspectives, most of which are facilitated or made possible by satellites. These include real-time video surveliance (internal and external), biometric ID and access control, monitored simultaneously on and off site.

**Environmental Impact Monitoring.** Satellites are reporting real time on the environmental impacts of; oil pipelines crossing the deserts, air and water pollution at off-shore facilities, toxic emissions from production facilities, water purity, and air quality in living quarters on off-shore facilities.

# FEATURE



**Growing Requirements Demands Increased Reserve Efficiencies.** Oil and gas field reserves can now be monitored real-time via satellite helping to improve the efficiencies and overall production of a given field by as much as 20%. When the cost of exploration and production is improved by 20% the figures come out in the billions of dollars.

**Managed, Private, Multinational, Dedicated, Secure Networks.** Members of the oil and gas exploration and production industry, operating on satellite based networks, often rely on one, integrated voice and data network. Such networks, by example provide dedicated toll quality voice circuits across international borders and a virtual high speed secure office LAN connecting ships at sea, production fields in the Middle East, engineers in Germany, with logistics' teams in Qatar all simultaneously and all using the most cost effective information super highway – today's satellites.

In Asia, where the energy demand is growing the fastest, we see extensive exploration both on land and off the coasts of Australia, Indonesia, Vietnam, China, Timor-Leste, India and in the far north – the Sakhalin Islands. The economies of Asia and the rest of the world are tied to the petrochemical industry which relies heavily on satellites for much more than cable TV via satellite.

Satellite communications supporting the energy industry serve the most remote and harshest of locations, with the highest quality of communication services (voice, data, security, environmental monitoring, etc.), providing the umbilical cord through which vital communications flow. SM

**Thomas van der Heyden** is the Asia-Pacific Business Development Executive for CapRock Communications, a global satellite communications provider for the off-shore oilfield, maritime, construction, and mining industries, as well as for disaster relief and government applications. CapRock offers complete managed telecommunications solutions in the world's harshest and most hard-to-reach environments for broadband networking, real-time video, and digital telephony.

Tom, one of our industry's pioneers, started out in the Advanced Satcom Projects Group of the US military in 1972. Having completed his engineering and business law degrees, he has spent most of his career designing and implementing satcom systems in developing countries and remote regions of the world. His accomplishments, in addition to several patents in spacecraft design, include building China's first voice and data networks, building Indonesia's first wideband TDMA system network, writing the first FCC filing for DAB/DARS, the development of the Indonesian DBS program, and a fluency in six languages. Tom can be reached at Thomas.vanderHeyden@cprk.com.

## EXECUTIVE SPOTLIGHT

# Interview with AsiaSat CEO Peter Jackson

*How did the commercial satellite industry in the Asia-Pacific fare in 2004?*

The Asian transponder market remained slow in 2004. Though there were signs of economic improvement in some markets, the recovery of the transponder market usually lags behind the economic recovery.

*What was the major growth driver in this market?*

We continue to see growth from areas where satellite has unique advantages over all other forms of communications. The first is the delivery of common content, the largest application being video content, over a large geographic area to an unlimited number of locations for a single fixed price. In addition, the satellite's ubiquitous coverage and reliability allows it to provide high quality connectivity to any location under its footprint making it ideal for certain telecommunications networks.

*So far, how is 2005 shaping out to be like, for your company and for the whole Asian industry?*

We achieved a double-digit revenue growth in 2004 after taking into account of a one-off payment, excluding that payment revenue would have been flat. Stepping into 2005, we see limited growth with some new channels and new services introduced into the region. Transponder prices are stabilising as customers realise that not all transponders are equal and certain satellites are better at providing what they require than others.

*Satellite broadband is being touted as the Next Big Thing in the commercial satellite market. What are your views on this?*

In the urban areas we see DST or ADSL provided over the telephone network as the bulk provider with satellite service only serving enterprise customers that require large capacity links and they do not have good quality telephone service. In the rural or outlying areas without telephone service or areas where the telephone lines do not support ADSL we see a market need for satellite broadband but the ability of customers in these areas to pay for the service is an important factor. For these areas a bundled telephony/internet product to a local community centre may provide a more economic solution. With such a system in place local landlines can extend the services to other locations such as police stations or businesses that can afford direct service. In some countries, Australia is an example, Governments have imposed universal service fees to subsidise service to these outlying areas and this will make broadband via satellite more viable.

*What is your prognosis for 2005 as a whole?*

With the region's economy improving, demand could well pick up in the second half. In terms of pricing, the revived demand will result in higher prices for C-band, but for Ku-band there is still oversupply in certain markets and this could hold prices down.

*What do you think would be the biggest development in the next 3-5 years in Asia?*

Satellite will continue to play a significant role in content delivery. In the coming years, as quality increasingly becomes a market differentiator we will see the development of new types of video content being delivered by satellite such as HDTV and Digital Cinema. Asia will emulate the U.S. and Europe and we will see increased live news events being transmitted to the studios via satellite and the now infamous "Satellite News Gathering" trucks. Real-time news and sports events will be delivered to 3G mobile or other handheld devices and the distribution of this content will be via satellite to the cell sites. In fact, AsiaSat is already carrying some occasional HD traffic and content for mobile devices.

*Where is your company in all these developments?*

We hope at the front; working with our customers to develop their transmission and distribution plans that will allow them to continue to grow and prosper. We will increasingly be looking to develop and provide the most up-to-date satellite and ground assets that meet their needs at the best prices. SM

VIEWPOINT

# Competition and Consolidation in the Satellite Launch Sector

Bruce Elbert
President, Application Technology Strategy, Inc.

Commercial satellites are now exclusively launched by commercial launch companies. No longer is orbit delivery a governmental enterprise, justifying such huge programs as the Space Transportation System (STS). Rather, commercial companies in the US, the EU and Russia lift the majority of geostationary satellites through a competitive procurement process. More importantly, the reliability of orbit placement has stabilized to the point that satellite operators can plan replacement and expansion satellites, usually obtain sufficient insurance, and get the launches they need to maintain and grow their businesses. The stream of successes in recent years by the leading rocket companies yields greater confidence in any given launch (although this is never assured since the chance of failure is generally in the range of five to ten out of a hundred).

## Launch System Providers

The focus of this article is on geostationary satellites of the class needed to meet major application demands in video transmission, broadband data communications, mobile satellite services, radio/audio broadcasting, and point-to-point links. Launch services suitable for these are offered internationally by: Arianespace, Boeing Launch Services (BLS) and International Launch Services (ILS). Delivery of up to six communications satellites at one time has been demonstrated in the past. However, the norm is either one very large satellite (weighing between 3,500 and 6,700 kg) or one or two smaller satellites (weighing between 1,200 and 2,500 kg). The mass values stated here are for delivery to geosynchronous transfer orbit (GTO), the elliptical orbit used as the most common intermediary phase prior to GEO.

## Boeing Launch Services

Boeing has consolidated its commercial satellite launching operations into a subsidiary called Boeing Launch Services (BLS). Delta II is a direct descendant of the original Delta series and has been described as the workhorse of NASA owing to the quantity of vehicles produced and the overall success record. Its lift capability is limited to approximately 2,000 kg to GTO, restricting its use to smaller satellites like GPS and Digital Globe. Boeing has in its manifest a total of five Delta II launches this year, the most recent in January being Deep Impact, a NASA mission to collide with a comet, and GPS just this May.

Delta IV takes the heavy end of the mass spectrum, delivering payloads up to 13,000 kg to GTO. In fact, Delta IV can be provided in various configurations to match payloads between about 4,000 and 13,000 kg by combining different quantities of strap-on rockets and solid rocket boosters (two or four). Both four meter and five meter farings are usable. There have been four launches of Delta

## VIEWPOINT

IV, three of which were completely successful; one (a demonstration) met its objectives but underperformed in terms of payload to orbit. Eutelsat W5 and two Air Force DSCS II satellites in March and August, 2003, respectively, were among those successfully launched by Delta IV rockets.

Sea Launch is the commercial centerpiece of BLS in terms of lift capability and performance, having just achieved a record of 14 successes in a row. Already familiar to our industry from publicity photos of the launch platform (a converted ocean-going oil drilling platform) and the command ship, Sea Launch is a joint enterprise of the following organizations:

- Boeing - payload fairing, analytical/physical spacecraft integration, mission operations, and management of the Home Port in Long Beach, CA
- RSC Energia - Block DM upper stage, launch vehicle integration, ground systems and launch operations
- SDO Yuzhnoye/PO Yuzhmash - two stages of Zenit-3SL, vehicle integration support, launch operations support
- Kvaerner ASA - *Odyssey* Launch Platform and the *Sea Launch Commander* (Assembly and Command Ship)

This group has done a wonderful job on a very innovative approach to launching big satellites. The success of DIRECTV/Spaceway on April 26 placed what is the heaviest commercial satellite ever produced (6,080 kg) within 5 km of its target. BLS calls this a "bull's eye" in injection accuracy terms. The Block DM final stage performed well in 17 launches, with only one missing its mark.

### International Launch Services

Lockheed Martin gained a strong position as a commercial launch provider through their landmark joint venture with key highly experienced Russian launch vehicle manufacturer and operator, Khrunichev State Research and Production Space Center (KhSC). I had the chance to visit the KhSC factory outside of Moscow that produces the Proton booster, a massive piece of steel that has achieved a record of 45 consecutive successful launches. RSC Energia previously provided the upper Block DM stage, now replaced with the Breeze M from KhSC. ILS also offers the Atlas series of US launchers, which resulted from the Lockheed Martin acquisition of the Convair division of General Dynamics in San Diego. As described to me by Sales & Marketing Director Jack Juraco, ILS is now the largest supplier of launches to GTO. The current Proton and Breeze M system launches from Baikonur Cosmodrome, Kazakhstan, and can lift up to about 6,000 kg to GTO.

The venerable Atlas rocket, originally an ICBM but used successfully for many decades as an expendable launcher, has been upgraded by Lockheed Martin Space Systems, Denver, CO, as a result of the Air Force EELV program. The high end of the Atlas V system can lift up to 8,700 kg to GTO. This is currently outside the range of commercial satellites, which are not yet in this size category. Lockheed Martin has launched five Atlas Vs and all versions

## VIEWPOINT

of Atlas have achieved a record of 76 successes in a row (i.e., Atlas II, Atlas IIAS, Atlas III and Atlas V).

**Arianespace**

Last but not least in my review is Arianespace, based in Evry near Paris, France and with its US office in Washington, D.C. Arianespace pioneered the concept of a commercial satellite launching company, a path followed in the US by Lochkeed Martin and Boeing. Arianespace gained prominence by successfully launching single and dual payloads one after another using the Ariane 3 and 4 rockets out of their dedicated near-equatorial launch site in French Guiana. This made clear to our industry that European rockets and business practices were going to be the norm. What still distinguishes Arianespace from the other providers is their customer-friendly approach of dividing up a particular mission to permit reduced launch cost for smaller spacecraft.

Arianespace retired its workhorse Ariane 4 rocket in 2003 in favor of the much larger and more versatile Ariane 5 launch system. So far, the reliability record of the Ariane 5 series needs to attain the level of Ariane 4 (a likely certitude). Arianespace successfully flew the ECA (cryogenic upper stage) version of the Ariane 5 in February of this year demonstrating the capability to lift over 8,300 kg to GTO. The Ariane 5 ECA employs the same SNECMA-built HM7-B cryogenic upper-stage engine that flew a record 74 consecutive successful flights on the Ariane 4. Arianespace plans to increase the Ariane 5 ECA's lift capability to close to 10,000 kg over the coming months. Clayton Mowry, President of

Arianespace, Inc. (the US subsidiary), stated that in June,

2004, Arianespace ordered a new batch of 30 Ariane launchers from EADS Space Transportation, demonstrating their long term commitment to the market.

Over 40 spacecraft are under contract to launch on Ariane 5 in the coming years giving it the largest backlog of any commercial launch services provider.

### Other Launch Capabilities

From time to time, we hear announcements of new launching systems and new launch sites. In some cases, this has, in fact, borne true. The old Proton rocket of the Soviet Union along with their "southern" launch facility at the Baikonour Cosmodrome in Kazahkstan was proven by ILS to represent solid capability at an affordable price. Many large and medium-sized GEO satellites have successfully been placed into orbit by this system. Likewise, the Boeing Sea Launch system, using another Soviet rocket, Zenit, is a solid performer.

The Asian-developed launch systems from Japan, China and India are used for missions primarily within their respective countries. All of these countries provide heavy government support for the development, manufacture and operation of rockets in the small to medium class. The successful Long March 3-II launch last April by China Great Wall was of a 4,600 kg Alcatel-built satellite for Hong Kong-based satellite operator, APT. Generally, few western satellite operators are availing themselves of Asian launches, although the situation can change quickly if a variety of obstacles are reduced, pricing becomes very attractive, or a string of bad luck befalls the western providers.

Launch services have, at times, attracted startup ventures. The most significant of these is Orbital Sciences, which began its business supplying the Transfer Orbit Stage (TOS) to NASA for use in conjunction with the Space Shuttle. Their Pegasus rocket that is carried below an L-1011 has been used successfully to lift some small payloads to LEO. More recently, a startup called Space Exploration Technologies Corporation (SpaceX) moved to the forefront by winning an Air Force contract. Announced on May 2, 2005, SpaceX was awarded a $100 million contract by the U.S. Air Force/Space and Missile Systems Center for Responsive Small Spacelift (RSS) launch services. The purpose of this contract will be to provide low cost orbital launch vehicles and responsive (launch 12 months from award of basic contract) launch services, on a recurring basis, using a mature vehicle design and a commercially derived booster to meet mission/payload requirements.

***DIRECTV's Spaceway F1 satellite launched by Sea Launch last April 26, 2005.*** ***(photo courtesy of Sea Launch).***

### Demand for Launches

The major sectors of the satellite communications industry have undergone consolidation in recent years. Satellite manufacturing is dominated by five companies – Alcatel, Boeing, EADS/Astrium, Lockheed Martin and Space Systems/Loral . A smaller manufacturer, Orbital Sciences, supplies commercial spacecraft as well. The majority of operating GEO satellites is owned by the major operators – Eutelsat, Intelsat, JSAT, NewSkies, PanAmSat and SES; and direct-to-home television services by Dish Network, DIRECTV and Sky employ a substantial quantity of satellite capacity and serve tens of millions of subscribers. These companies have been fairly conservative in the use of on-orbit technology, but recent advances in baseband on-board processing and multiple-beam antenna systems are challenging the traditional bent-pipe repeater. Overall, there is a need for between 15 and 25 satellite launches per year. The specific number fluctuates wildly due to the dynamics of satellite replacement schedules as well as the introduction of new applications at new frequencies and new orbit positions. Thus, the market for launches is moving toward a few large buyers engaging a few large sellers.

The role of more focused companies in the US like Orbital Sciences and SpaceX will likely be in the delivery of small payloads to low earth orbit or possibly GTO. Applications for such missions will probably not come from the traditional commercial satellite sector. However, SpaceX indicates on its website how a 2,000 kg payload would be lifted to GTO by one of their proposed offerings.

### Strategic Alliances Shape the Launch Industry

It is now becoming the norm for the major launch providers to form strategic alliances such as joint ventures and joint marketing agreements. ILS was perhaps the first such JV, followed successfully by Sea Launch. Lockheed Martin and Boeing have announced in May their plans to

## VIEWPOINT

form the United Launch Alliance (ULA) that would contain their US engineering and manufacturing operations. ULA would also be the single marketing arm for the US government, principally the US Air Force. Design and engineering will be conducted at the Lockheed Martin facility in Colorado and manufacturing at the Boeing Alabama factory. ILS and BLS will continue to operate independently, selling and providing commercial launch services via the Proton and Sea Launch systems, respectively, as well as Atlas and Delta.

The Launch Services Alliance (LSA) was formed two years ago by Arianespace, BLS and Mitsubishi Heavy Industries (MHI). The successful launch of DIRECTV 7S by Sea Launch in 2004 was the first mission performed within the LSA framework. DIRECTV 7S originally was to have been orbited by Arianespace at the end of 2003 - which created a scheduling conflict with the Ariane 5's Rosetta scientific mission. Using LSA's flexibility, DIRECTV 7S was transferred from Ariane 5's manifest to a Sea Launch vehicle, and the spacecraft was lofted on May 4, 2004.

In May 2004, Australian telecommunications carrier Optus became the first customer to sign a new launch order incorporating an alternate back-up launch vehicle with LSA. This order with Arianespace calls for the Optus D1 and D2 payloads to be orbited by Ariane and Soyuz (a smaller Russian vehicle) in 2005 and 2007, respectively. Back-up launch capacity, if needed, would be provided through LSA.

Europe was first to create a commercial company to market a rocket for use in launching commercial satellites. The rockets themselves were produced by aerospace companies in several countries, but final integration and launch operations remained with Arianespace. This same model is now pursued by ILS and BLS; the ULA joint venture is likewise a coalesced business structure. Their market power can make it difficult for the new entrant to compete in the GEO market. On the other hand, there is always room for innovation, whatever the size of the organization or its country of origin. SM

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

## COUNTRY PROFILE

# Brazilian Satellite Market

**By Bernardo Schneiderman**


## Vital Statistics

**Land area** 8,456,510 sq km
**Comparative land area** slightly smaller than the US
**Population** 186,112,794
**GDP - real growth rate:** 5.1% (2004 est.)
**GDP - per capita** purchasing power parity - $8,100 (2004 est.)
GDP - composition by sector
*agriculture:*10.1%
*industry:*38.6%
*services:* 51.3% (2004 est.)
**Telephones - main lines in use** 38.81 million (2002)
**Telephones - mobile cellular** 46,373,300 (2003)
**Radio broadcast stations** AM 1,365, FM 296, shortwave 161 (of which 91 are collocated with AM stations) (1999)
**Television broadcast stations** 138 (1997)
**Internet hosts:** 3,163,349 (2003)

*Source: CIA WORLD FACTBOOK*

Brazil is the largest country in Latin America both in terms of population and in land area. Due to its size, satellite communications is an ideal to medium to communicate with its remote regions. Brazil has been using satellites since 1969.

Satellite communications for commercial applications has been growing during the last 6 years since the Brazilian Government open the space for more local and international satellite carriers to provide services in Brazil.

In the table below is the summary of satellite carriers with domestic Satellite and international satellites licenses and active in the Brazilian satellite communications market. Anatel, the Brazilain telecom regulatory body, requests that any satellite carrier must have a local company organized in Brazil in order to provide services in Brazil. As you can see all the international operators have a branch in Brazil to provide the services.

The market will be more stable and grow. The projects for HDTV in Brazil and the expansion of the government program to popularize Internet with will be the best push in the market.

In addition to the Commercial area, Brazil has in place a space program that includes the development of geostationary satellites. Further cooperation with Ukraine and Russia aimed at improving Brazil's VLS rocket, which has yet to launch successfully, and the expansion of Brazil's Alcantara Launch Center located in the Northeast region is part of the program. Brazil has big plans for Alcantara Launch Center. In addition to its aim to make the facility an international

# COUNTRY PROFILE

| Satellite Carriers | Satellites | Bands | Orbital Position in Degree | Status |
|---|---|---|---|---|
| **1 - Brazilian Carriers** | | | | |
| Hispamar | Amazons | C 7 Ku | 61.0W | Operational |
| Local Skynet do Brasil | Estrella do Sul | Ku | 63.0W | Operational |
| Star One | Brasilsat B1 | C & X | 70.0W | Operational |
| | Brasilsat B2 | C &X | 65.0W | Operational |
| | Brasilsat B3 | C | 84.0W | Operational |
| | Brasilsat B4 | C | 92.0W | Operational |
| | Star One C1 | Ku & Ka | 65.0W | Planned 2006 |
| | to be defined | Ku | 70.0W | NA |
| **2 - International Carriers** | | | | |
| Eutelsat do Brasil | W1 | Ku | 10.0E | Operational |
| | Atlantic Bird 1 | Ku | 12.5W | Operational |
| | Atlantic Bird 2 | Ku | 8.0W | Operational |
| | Atlantic Bird 3 | C & Ku | 5.0W | Operational |
| Hispamar | Hispasat - 1C | Ku | 30.0W | Operational |
| | Hispasat - 1D | Ku | 30.0W | Operational |
| Intelsat Brasil Ltda. | 705 | C | 50.0W | Operational |
| | 805 | C | 55.5W | Operational |
| | 901 | C | 18.0W | Operational |
| | 801 | C | 31.5W | Operational |
| | IS 903 | C | 34.5W | Operational |
| | IS 905 | C | 24.5W | Operational |
| | IS 907 | C | 27.5W | Operational |
| Loral Skynet do Brasil Ltda. | Telstar 12 | Ku | 15.0W | Operational |
| Nahuelsat Satellites Com Lt. | Nahuel 1 | Ku | 72.0W | Operational |
| New Skies Satellites Ltda | NSS - 806 | C & Ku 40.5W | Operational | |
| | NSS - 7 | C & Ku | 21.5W | Operational |
| | NSS - 8 | C & Ku | 105.0W | Operational |
| Panamsat do Brasil | PAS 1- R | C & Ku | 45.0W | Operational |
| | PAS - 9 | C & Ku | 58.0W | Operational |
| (Under Galaxy do Brasil) | Galaxy III R & C | Ku | 95.0W | Operational |
| (Under Key TV) | PAS - 3 | C & Ku | 43.0W | Operational |
| Satmex do Brasil | Solidaridad 2 | Ku | 113.0W | Operational |
| | Satmex V | C & Ku | 116.8W | Operationa |
| SES American do Brasil | AMC - 4 | Ku | 101.0W | Operational |
| | AMC -12 | C | 37.5W | Operational |
| Star One S. A. | Anik F1 | Ku | 106.8W | Operational |

Source Anatel - www.anatel.gov.br

spaceport, the Brazilian space agency envisions Alcantara as an aerospace center that would host a university campus and a complex of space museums.

Part of the Brazilian Space Program is the project to launch three geostationary satellites in orbital positions to be defined by Anatel (equivalent of the FCC in Brazil). The project is coordinated by the Ministry of Defense and plans to launch two redundant satellites with transponders in L, C and X-Band and a third satellite in Ku-Band and meteorological and image sensors. The target of the project is to become operational in 2009.

The life cycle of the two satellites is planned for 15 years and the third one for 10 years.

Last May 12 in a meeting held at the Ministry of Communications in the Brzilian capital of Brasilia, the results of preliminary studies for the technical specifications of the Brazilian geostationary satellite program was presented. The study was developed by CTA (Centro Tecnico Aerospacial- Aerospace Technical Center), ATECH Foundation and CPQD (Centro de Pesquisa e Desenvolvimento – Research and Development Center).

The study started in 2003 and outlined the plan to launch Brazilian satellites into orbit to meet the demands of the Government Strategic Communications in Brazil. The target is for the Brazilian Government to own their satellite system and control their security communications needed for the Defense and strategic requirements. The current satellite operators are private entities controlled by foreign investors and do not have any incentive to provide these kind of services. The program mission is to expand and improve the surveillance of the vast Amazonian region and monitoring the air and maritime traffic in Brazilian territory. Additionally the other benefits are:

- Control the Air and Maritime

# COUNTRY PROFILE

Industry
- Potential to share the satellite services with other Latin countries
- Expand the surveillance in the Amazonian Region
- Expand the surveillance in the coastal areas and the ocean limits of Brazil
- Improve the meteorological forecast for several economic sectors in Brazil ( Agriculture industry, Tourism, Transport, Power Distribution and other main sector of the economy)
- Improve the logistics and preparedness of the National Guard in case of natural disasters.

In a interview with one of the representatives of the program, it was disclosed that the next step is to finalize the project in the 3rd quarter of 2005 and get the final government approval. After this step is to issue the procurement at the end of 2005 or early 2006. Several major satellite manufacturers have already submitted proposals for the satellite component of the program including Space Systems Loral, Alcatel Space, EADS and others. SM

Bernardo Schneiderman has over 20 years of experience in Satellite communications and is the President of Telematics Business consultants based in Irvine, CA. He has been working in Business Development, Sales and Marketing for Satellite Carriers, VSAT Equipment Manufacturer and Consulting Companies in the USA, Latin America, Brazil and Africa developing business for the Telecom, Broadcast and the Enterprise Market Segment. He was the editor of the Publication Brazil Telematics Newsletter during 1995-2003. He has a MBA from University of San Francisco with Major in Telecom and International Marketing and BSEE from UFRJ in Brazil. He can be contacted at tbc-telematics@cox.net

# STOCK MONITOR

| Company Name | Symbol | Price (May 27) | 52-wk Range |
|---|---|---|---|
| APT SATELLITE | ATS | **1.31** | 1.25 - 2.10 |
| ANDREW CORP | ANDW | **13.29** | 9.30 - 21.52 |
| ASIA SATELLITE TELECOMMUNICATIONS (ASISAT) | SAT | **17.89** | 15.20 - 19.81 |
| BALL CORP | BLL | **37.96** | 33.11 - 46.45 |
| BOEING CO | BA | **63.02** | 44.91 - 63.00 |
| BRITISH SKY ADS | BSY | **40.10** | 33.22 - 46.86 |
| CALAMP CORP | CAMP | **6.67** | 5.12 - 10.18 |
| C-COM SATELLITE SYSTEMS | CMI.V | **0.24** | 0.21 - 0.60 |
| COM DEV INTL LTD | CDV.TO | **2.52** | 2.27 - 3.80 |
| COMTECH TELECOM | CMTL | **34.80** | 10.8467 - 38.90 |
| THE DIRECTTV GROUP | DTV | **14.87** | 13.88 - 18.25 |
| ECHOSTAR COMMUNICATIONS | DISH | **29.05** | 26.95 - 34.38 |
| FREQUENCY ELCTRONICS | FEI | **11.90** | 9.80 - 16.05 |
| GILAT SATELLITE NETWORKS | GILTF | **5.99** | 3.95 - 7.62 |
| GLOBECOMM SYS INC | GCOM | **5.528** | 4.67 - 7.58 |
| HARRIS CORP | HRS | **29.11** | 21.60 - 35.00 |
| HONEYWELL INTL | HON | **36.63** | 31.85 - 39.50 |
| INTEGRAL SYSTEMS | ISYS | **21.72** | 15.29 - 24.70 |
| KVH INDS INC | KVHI | **9.14** | 6.61 - 14.75 |
| L-3 COMM HLDGS | LLL | **68.88** | 56.20 - 77.26 |
| LOCKHEED MARTIN CORP | LMT | **65.40** | 48.39 - 65.46 |
| NEWS CORP | NWS | **16.91** | 15.305 - 19.41 |
| NORSAT INTL INC | NSATF.OB | **1.20** | 0.425 - 1.141 |
| NTL INC | NTLI | **63.89** | 46.65 - 73.79 |
| ORBITAL SCIENCES | ORB | **9.66** | 8.84 - 14.19 |
| QUALCOMM INC | QCOM | **37.16** | 32.08 - 44.99 |
| RADYNE COMSTREAM | RADN | **8.19** | 6.26 - 9.53 |
| SCIENTIFIC ATLANTA | SFA | **33.92** | 24.61 - 36.06 |
| SIRIUS SATELLITE RADIO | SIRI | **5.97** | 2.01 - 9.43 |
| SES GLOBAL FDR | SDS.F | **10.98** | 6.30 - 11.10 |

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