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Worldwide Satellite Magazine

Vol. 2 No. 9



THE NEW SATELLITE ENVIRONMENT

Your Satellite Connection to the World

SES  GLOBAL

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NOTES FROM THE EDITOR

The New Satellite Environment



For some of the largest global satellite operators, at least for now, there is a new sheriff in town. The biggest story last year was the takeover of three of the four largest global satellite operators, namely, Intelsat, PanAmSat and New Skies by private equity firms. Eutelsat is now in the process of divesting itself, after BT sold its shares in Eutelsat to private equity firms (see story in Industry News section, page 8).

There's been a lot of speculation on what effect would the takeover by private equity firms of major satellite operators--one concern was that there would be more fiscal responsibility and reluctance to make new investments requiring large capital outlays. The logic behind this being that private equity firms would like to recoup a much of their investment in a short span. Given the capital-intensive nature of the satellite business, this was perceived as a potential detriment to future growth of the industry.

While some of these concerns may be justified, a little fiscal responsibility, after the free-wheeling days that led to the internet and telecom busts that the industry experienced in previous years, is not necessarily a bad thing.

Besides, we are now seeing perhaps, where these private equity firms are taking satellite companies. PanAmSat has just announced their plans to go IPO (Initial Public Offering). This step would certainly expand the company's shareholder base and dispel any speculation on the extent of the control by private equity firms of satellite companies. Intelsat, who postponed its IPO prior to their sale to private equity firms, will most likely follow suit (meanwhile, as we go to press, we receive news that Intelsat's new owners have named a new President and CEO starting in March 2005).

Bruce Elbert in our lead feature provides a good contrast between the satellite industry in its nascent stages of development in the 60s and 70s to that of today. He paints a picture of industry that was characterized by bold risk taking and vision in the early stages and is now trying to put it's house in order after the spectacular busts in the late 1990s.

The influx of private equity firms may just provide the impetus for the next stage in the satellite industry's continuing evolution and development.

Virgil Labrador

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2005 CALENDAR OF EVENTS

January 15, Ko'Olau Golf Course
Hawaii, U.S.A.
5th Annual Cornisica Golf Classic (An official PTC event)
Barbara Coleman IP Access International, Inc.
Tel: 949-655-1035 Fax: 949-240-8072
E-mail: barbara@ipinternational.net
Web: www.cornisica.com/golf/

January 16, Honolulu, Hawaii, U.S.A.
GVF Asia-Pac Satcoms Forum: Network Deployment and the Asia-Pac Sustainability Imperative: ICT Applications and 'Best Practice' Satellite Strategies'
Martin Jarrold, Tel: +44 1727 884513
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January 16-19, Honolulu, Hawaii, U.S.A.
PTC '05
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February 2-3, Le Meridien Etoile, Paris, France
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February 14-18, Johannesburg, South Africa
SatCom Africa 2005
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Website: www.satcomafrika.com

March 1-4, Sao-Paolo, Brazil
Telexpo 2005 Cida Duarte
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E-mail: cduarte@advanstar.com.br Web: www.telexpo.com.br

March 15-17, Chelsea Village, London, UK
NewCom Africa 2005
Paul Stahl Tel: +44-(0)208-954-2081
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March 17, Bafda, London, UK
The 2nd European HDTV Summit
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March 22-25, Washington, D.C., U.S.A.
Satellite 2005
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March 25-27, Guangzhou, China
Expo Comm China South 2005
Karen Owens-Leon
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E-mail: owens@ejkrause.com
Web: www.expocomm.com/chinasouth

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

April 16-21, Las Vegas, Nevada, U.S.A.
NAB 2005
Tel: +1-202-595-2052 +1-888-740-4622
E-mail: register@nab.org / Web: www.nabshow.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
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FEATURED EVENT

ISCe 2005, Long Beach California, May 31-June 2, 2005



The Changing Business of Teleports

by Virgil Labrador

It has been six years since I worked in a teleport in Singapore and the business has changed profoundly ever since. Teleports are the backbone of the satellite industry. They consist of ground facilities that provide a variety of services including satellite ground control, transmission, playout and now internet and other services via satellite, fiber, microwave and other networks.

The first teleports in the U.S. consisted mainly of small facilities with a few dishes run by entrepreneurs. Today the business is dominated by larger companies. As the World Teleport Association's (WTA) annual "Teleport Benchmark" report says, the big companies in the teleport business are getting bigger and growing at a faster rate than medium and small companies.

The WTA also provides an annual list of "Top Teleport Operators" and curiously, five of the top ten are satellite operators, namely, Intelsat, PanAmSat, Telesat Canada, Space Communications Corp. and Telenor Satellite Services. Over the years, satellite operators have been heavily investing in teleport facilities. Recently, US-based satellite operator, SES Americom, purchased service provider Verestar, which owns substantial teleport facilities worldwide.

The "Teleport Benchmark" reports that three major trends driving the industry are: financial recovery, consolidation and service diversification. Other key findings include:

Scale is Important: The larger the company the more it gets in terms of revenue from its facilities. For example, large operators (those with revenues of \$70m or more annually) generate an average of \$34.5m in revenues from every teleport and \$1.5m per antenna, compared to \$3m per teleport and \$598k per antenna for small operators.

End-to-End Solutions will Dominate: 100 per cent of respondents to the WTA survey in 2004 agreed that end-to-end solutions will dominate the future of the industry,.

Teleports Are High-Value Sales Channels. For companies that sell products and services through teleports, the 2004 study confirmed the importance of the teleport channel. The large operators in the 2004 sample sold or resold \$82m in transponder capacity and \$24m in fiber capacity per year. The average midsize

company in the survey sold \$12.4m worth of transponder capacity, while small operators resold \$1.8m per year in satellite usage. In terms of spending on antennas, RF equipment and other capital assets, a teleport operating company with \$20 million in revenues represents \$4.65m in buying power, while a \$500 million operator presents a \$24m annual sales opportunity.

Top Five Markets: , the top five markets for the teleport industry will be (1) enterprise networking, (2) video backhaul for TV contribution and distribution, (3) enterprise video & audio (BTV), (4) government and military, and (5) Internet content hosting and distribution.

These and many other issues affecting the teleport business will be discussed in a panel dubbed "Evolving Teleport Solutions for Enterprise" at the forthcoming ISCe Conference and Expo to be held at Long Beach, California from May 31-June 2, 2005. The session will be moderated by Satnews and will focus on the evolution of the teleport business and how it is coping with the changing market forces in the industry. A panel of speakers representing major teleport operators and users will be participating in the panel. There will also be a pre-conference half-day workshop on teleports to be conducted by the WTA.

We look forward to seeing you at ISCe in May.

Sponsorships and Exhibiting Options at ISCe 2005

Promote your product or services to a senior-level audience of key decision-makers from the commercial, government and military sectors by securing one of the available sponsorship packages or exhibiting options at ISCe. For additional information, please contact Gina Lerma at (310) 410-9191 or GLerma@hfusa.com or go to www.isce.com

Virgil Labrador is the Managing Editor of SatMagazine. He was formerly marketing director of the Asia Broadcast Centre, a full-service teleport in Singapore then owned by the US broadcasting company, CBS. He can be reached at virgil@satnews.com



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FEATURE

Advance Projects International and IP Access to Host 5th Annual Cornisica Classic Invitational Golf tournament

(Saturday, January 15, 2005, Best-ball Four-Person Scramble Format, Ko'Olau Golf Course, Oahu, Hawaii)

As a prelude to the Pacific Telecommunications Council's 2005 Conference (PTC2005), Advanced Projects International and IP Access International are teaming up to bring you an unprecedented opportunity to golf at one of Hawaii's premier and picturesque golf courses and indulge in an intimate post-tournament reception amongst your industry's peers.

The tournament is free to all invited and includes luxury charter coach transportation to and from Ko'Olau Golf Course. It will be held on Saturday, January 15, 2005, Best-ball Four-Person Scramble Format at the Ko'Olau Golf Course. Included are golf bag handling, use of lockers and locker room facilities, tee prizes, box lunch, range balls, golf cart, "no cash necessary" beverages and cocktails during play, a post-play buffet dinner and



cocktail mixer. If you choose not to travel with your golf clubs, rentals will be available for a nominal fee.

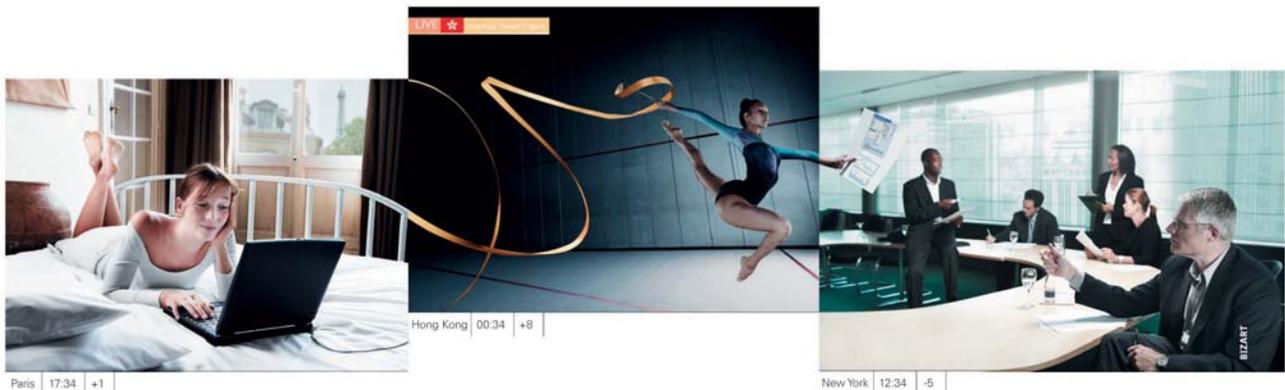
Special contests include men's and ladies longest drive, closest-to-the-hole, four hole-in-one opportunities and a putting contest. Prizes include top brand drivers, wedges,

putters and balls. The winning foursome will receive a \$1,000 cash prize.

The tournament will be held the day before the official PTC launch. One cannot think of a better way to segue into PTC than this fun-filled and unique networking opportunity.



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INDUSTRY NEWS

BT Sells Stake in Eutelsat



Artist's concept of the Helios IIA satellite (CNES photo)

UK's largest telecoms company BT Group Plc has agreed to sell its 15.8 percent stake in Eutelsat SA to a Goldman Sachs Group Inc. investment partnership for \$690 million (£363 million) in cash.

In a Regulatory News Service statement, BT said it sold its entire shareholding in Eutelsat to GS Capital Partners 2000. It added, however, the transaction

was conditional only upon the approval of the board of Eutelsat. The deal was expected to complete in the current financial year.

Eutelsat is currently the world's third-biggest satellite operator, ranking behind SES Global and Intelsat Ltd. It now has capacity on 24 satellites that provide coverage from North and South America to Far East Asia. Its satellites are used for broadcasting more than 1,450 television and 750 radio stations to 110 million cable and satellite homes, for TV contribution services, corporate network solutions, positioning and communications solutions for mobile users, Internet backbone connections and broadband access for terrestrial, maritime and in-flight applications.

Skylogic, Eutelsat's broadband affiliate, markets and operates services through platforms located in France and Italy that serve users in Europe, Africa, Asia and the Americas. Revenues for the 2003/2004 financial year were €760 million.

Intelsat Regains Control of the Intelsat Americas 7 Satellite

Intelsat, Ltd. announced last Dec. 2 it had regained contact and control of the Intelsat Americas 7 satellite, which experienced a sudden and unusual electrical distribution anomaly on November 28. Intelsat said this was the result of an intensive recovery effort launched by the Intelsat technical team.

Intelsat added service restoration is underway, with several key customers expected to be operational on IA-7 by the end of the day. Although testing of the satellite's capabilities is still underway, Intelsat said in a statement, operations have been restored on a portion of the satellite's transponders,

Prior to IA-7's reactivation Friday night, the affected Intelsat customers had all been offered alternate capacity at different

orbital locations, with many customers restored on alternate Intelsat capacity within hours of Sunday morning's anomaly.

The exact cause of the anomaly, according to Intelsat, is still being investigated, in cooperation with Space Systems/Loral, the satellite's manufacturer, and Loral Skynet, each of whom participated in the recovery effort.

"Our first priority in this event was to address the needs of our existing customers and their end-users," said Conny Kullman, CEO of Intelsat, Ltd. He added Zeus Holdings Limited, Intelsat's prospective acquirer, is fully apprised of developments as they occur with respect to the IA-7 satellite.



Intelsat continues to work closely with Space Systems/Loral to determine and fully analyze the cause of the anomaly on Intelsat America's 7.

Under the terms of the agreement dated August 16, 2004, among Intelsat, Ltd.,

Intelsat (Bermuda), Ltd., Zeus Holdings Limited, Zeus Merger One Limited and Zeus Merger Two Limited, the total loss of the IA-7 satellite would give the purchasers the right not to consummate the acquisition of Intelsat for \$5 billion, including approximately \$2 billion of Intelsat's existing debt. Intelsat shareholders approved last October the proposed acquisition of the company by Zeus Holdings Limited, a company formed by a consortium of private equity groups: Apax Partners, Apollo Management, Madison Dearborn Partners and Permira.

Kullman said "Zeus is continuing its evaluation of the situation.

PanAmSat Files Registration Statement for \$1.2 Billion Initial Public Offering of Common Stock

PanAmSat Holding Corp. said Monday it has filed a registration statement with the U.S. Securities and Exchange Commission for an initial public offering of as much as \$1.12 billion of shares of its common stock.

PanAmSat said Morgan Stanley & Co. Incorporated, Citigroup Global Markets Inc. and Merrill Lynch & Co. are serving as joint book-running managers of the offering.

INDUSTRY NEWS

The satellite operator, however, did not specify how many shares it plans to sell or estimate a price per share. These details are customarily disclosed in future filings.

In August this year, the Federal Communications Commission approved the sale of PanAmSat to affiliates of Kohlberg Kravis Roberts & Co., L.P., The Carlyle Group and Providence Equity Partners, Inc. for approximately \$2.6 billion. KKR now has 43.5 percent stake while Carlyle and Providence each hold 26.9 percent stake in PanAmSat. With the sale of PanAmSat in August, the company's shares were delisted from the NASDAQ.

PanAmSat currently owns and operates a fleet of 24 satellites, providing video, broadcasting and network distribution and delivery services worldwide.

Packeteer Acquires Mentat

Packeteer, Inc. (NASDAQ:PKTR), a leader in WAN Application Traffic Management has acquired privately held Mentat Inc. of Los Angeles, Calif.

Mentat is a technology leader in protocol acceleration technologies and transparent proxies providing high-performance networking solutions for satellite and high-latency network links. The acquisition is seen to deepen and extend Packeteer's intellectual property and provides advanced acceleration capabilities for new WAN performance solutions for global enterprise customers.

Under the terms of the agreement, Packeteer will pay approximately \$16.5 million in cash to acquire all outstanding shares of Mentat. In addition, Packeteer will pay approximately \$3.5 million in retention bonuses to Mentat employees in both cash and restricted stock, with the majority being paid over the next two years. Mentat will operate as a Packeteer business unit reporting to Mike Schumacher, VP of Engineering for Packeteer.

"This acquisition is an important step in more fully defining our network system vision for Fast WAN appliances and it provides significant technology for additional acceleration capabilities that make us more strategic to enterprise networks," said Dave Cote, president and CEO of Packeteer. "In addition to the immediate synergies that we gain in the marketplace, Mentat's technology provides a foundation for increasing returns as we consolidate more capabilities into one appliance."

Arianespace Successfully Orbits Helios IIA, Six Auxiliary Payloads



An Ariane 5G launcher lifts off from Europe's Spaceport in Kourou, French Guiana, on December 18, successfully injecting Helios IIA into Sun-synchronous orbit (Arianespace photo)

Arianespace successfully launched last Dec. 18 the Helios IIA observation satellite for the French, Belgian and Spanish ministries of defense.

Following a flight lasting 60 minutes and 8 seconds, the Ariane 5 launch vehicle accurately injected Helios IIA into Sun-synchronous polar orbit. The mission also deployed six auxiliary payloads: four Essaim micro-satellites and two other small spacecraft, Parasol and Nanosat.

Helios IIA is the initial satellite in France's second-generation defense and security spaceborne observation system, being conducted in conjunction

with Belgium and Spain. France's DGA defense procurement agency (Délégation Générale pour l'Armement), which is part of the French MoD, is in charge of the program. It has assigned overall responsibility for the space segment to the French space agency, CNES (Centre National d'Etudes Spatiales).

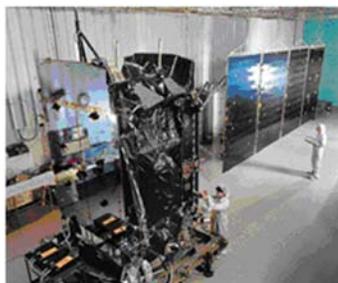
Helios IIA weighed approximately 4,200 kg. at launch. It was built by EADS Astrium as prime contractor, leading a large team of European subcontractors, including Alcatel Space, in charge of the high resolution imaging instrument.

Lifting off from the Spaceport in French Guiana at mid-day, the Ariane 5 Generic vehicle followed a northward trajectory to deploy its primary satellite payload - the Helios 2A military reconnaissance platform - in Sun-synchronous orbit, along with six auxiliary spacecraft.

In contrast to missions to geostationary orbit that have a long launch window, Saturday's northward flight had a precise moment for the ignition of its main cryogenic engine: 1:26 p.m., local Kourou time. The Ariane 5 was ready - and it lifted off right on time, under sunny French Guiana skies.

INDUSTRY NEWS

Lockheed Martin Confirms Contract for 5 A2100 Satellites from Cablevision



Lockheed Martin's Solar Array Test Facility in East Windsor NJ. (Lockheed Martin photo)

Lockheed Martin has confirmed it (NYSE:LMT) had been awarded a contract by Rainbow DBS Company LLC, a subsidiary of Cablevision Systems Corp. (NYSE:CVC), to build its next five geostationary telecommunica-

tions satellites.

Designated Rainbow Ka-1 through Rainbow Ka-5, and situated at their final orbital locations of 62W, 71W, 77W, 119W, and 129W degrees, the satellites will provide direct broadcast services across the continental United States (CONUS). In addition, the most western satellites at 119W and 129W degrees will provide service to Alaska and Hawaii.

Although the terms of the agreement were not disclosed, Cablevision revealed last week it was spending about \$740 million for the deal saying it underscores Rainbow DBS' determination to push ahead with the Voom service in spite of continuing doubts on its costs and future viability.

ILS Successfully Launches AMC-16 on Atlas V

Against the pre-dawn sky from Cape Canaveral, the Americom-16 (AMC-16) satellite of SES Americom, an SES Global company (Euronext Paris and Luxembourg Stock Exchanges: SESG), roared into space onboard an Atlas V launch vehicle from Launch Complex 41 at the Cape Canaveral Air Force Station early morning of Dec. 17 at 7:07 a.m. Eastern Time. After 109 minutes, the spacecraft separated from the Centaur upper stage and was placed into geostationary transfer orbit. Initial signals were received from the satellite at 9:41 a.m. ET.

The hybrid Ku- and Ka-band satellite will begin payload and performance testing at 82 degrees West. SES Americom said it expects the AMC-16 to be ready to support the transmission of high-speed data and digital video services throughout the U.S. for the Americom 2Home® customer EchoStar Dish Network during the first quarter of 2005. **SM**



A New Dimension in Efficient Network Solutions

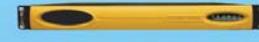


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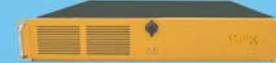
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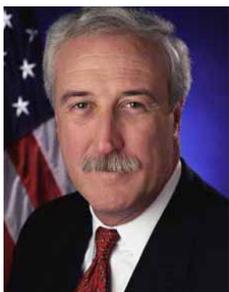


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EXECUTIVE MOVES

NASA Administrator Sean O'Keefe Resigns



Administrator Sean O'Keefe, who over the past three years led the National Aeronautics and Space Administration through an aggressive and comprehensive management transformation and helped the agency through one of its most painful tragedies, has resigned.

In his resignation letter, Keefe said he will continue until the President has named a successor and until the Senate acts on the nomination in February 2005.

"I've been honored to serve this President, the American people and my talented colleagues here at NASA," said Administrator O'Keefe. "Together, we've enjoyed unprecedented success and seen each other through arduous circumstances. This was the most difficult decision I've ever made, but it's one I felt was best for my family and our future."

O'Keefe, 48, is NASA's tenth administrator. Nominated by President George W. Bush and confirmed by the U.S. Senate, he was sworn into office Dec. 21, 2001. It was the Administrator's fourth Presidential appointment.

After joining NASA, Administrator O'Keefe focused his efforts on successfully bringing financial credibility to the agency and eliminating a \$5 billion budget shortfall for the International Space Station program. He introduced a number of innovative management and budget reforms. He led all federal agencies in the implementation of the President's Management Agenda, which is designed to

make government more responsive and efficient. In three of the original five categories on the Agenda, NASA's performance is at the highest standard.

DirecTV Group Elects Haim Saban to its Board of Directors

Haim Saban, chairman and CEO of Saban Capital Group, Inc., has been elected to the DirecTV Group, Inc. (NYSE:DTV) Board of Directors. Saban's appointment, effective immediately, increases the company's board to 11, a majority of whom are independent directors.



"Haim is a highly respected international businessman and his breadth of experience in building and overseeing successful media and entertainment companies will serve our Board and The DirecTV Group shareholders well," said Rupert Murdoch, chairman of The DirecTV Group.

Commenting on his election to the board, Saban said he looks forward to sharing his experience and contributing to the future success of the company.

Saban, 60, has served as chairman and CEO of Saban Capital Group since 2001. He also currently serves as chairman of the Supervisory Board of the German broadcaster ProSiebenSat.1 Media AG and is a member of the Board of Directors of the French broadcaster Television Francaise 1. He previously served as chairman and CEO of Fox Family Worldwide from 1997 to 2001.

Orbimage Names William Schuster Chief Operating Officer

William "Bill" Schuster has joined Orbimage Inc. (Pink Sheets: ORBM) as Chief Operating Officer.

Schuster brings a wide array of contacts, business management and leadership experience to Orbimage after successful careers in both government and industry. He was most recently with BAE Systems, where he started a new operation as the president of Integrated Systems. In this role, he built the Reston, VA site, its staff, developed processes/procedures and established a Systems Integration business. He then led that organization in the pursuit and ultimate prosecution of key "system of systems" enterprise-level opportunities and the capture of an extremely significant transformational government program within the first two years.

Prior to BAE, Bill served at Harris Corporation as vice president of programs within the government communications system division and was vice president of the space applications operation at Loral Space and Range Systems.

Bill began his professional career with the Central Intelligence Agency where he spent nearly twenty-two years. Upon his departure from CIA, he was recognized by Secretary of Defense, William Perry, for the pivotal role that he played in the conceptualization, development and operation of several National Reconnaissance Systems.

Executives Moves

Swales Aerospace to Realign Business Operations

Swales Aerospace will reorganize its internal business structure, effective January 1, 2005, to better meet the demands of its expanding customer base. Swales Aerospace said the new company structure will consist of four Strategic Business Units (SBUs). A corporate vice president, reporting directly to the CEO, Tom Wilson, will lead each unit.

As Vice President of the Civil Services SBU, Art Chomas, who has been with Swales for fifteen years, will be responsible for the company's core engineering support business to its NASA customers, including Goddard Space Flight Center, Langley Research Center, the Jet Propulsion Laboratory, and Johnson Space Center.

Pete Weinberger has been with Swales since 1982. As the new Vice President with responsibility for Commercial Programs and Engineering Services, he will lead the business unit that provides flight hardware and thermal management systems for commercial space systems in the U.S. and Europe.

Dan Mark, a Swales employee for 12 years, was named Vice President in charge of Civil Programs. In this role he will have responsibility for leading the company's activities to provide full service technology and systems solutions for NASA's Exploration and Science initiatives.

Boeing Announces Executive Changes

Boeing President and CEO Harry Stonecipher has announced a series of leadership changes affecting several key company positions. Connexion by Boeing President Scott Carson has been named to lead the Boeing Commercial Airplanes

sales team as vice president, Sales, reporting to Commercial Airplanes President and CEO Alan Mulally.

In his new role, Carson, 58, has responsibility for sales of commercial airplanes and related services to airline customers and leasing companies around the world. He has led Connexion by Boeing since its inception in 2000, bringing the high-speed in-flight Internet service to market with airlines in Europe and Asia. Prior to leading Connexion, he served as Commercial Airplanes' chief financial officer.

Carson replaces Toby Bright, who will be accepting new responsibilities in Boeing Commercial Airplanes. Carson's move will result in a series of other changes:

Laurette Koellner, 50, executive vice president, Internal Services, replaces Carson as president of Connexion by Boeing. Airline passengers began using the new service last May, and it will be available globally on four airlines by year-end, with additional airlines offering the service in 2005 and beyond

Rick Stephens, 52, president, Shared Services Group, replaces Koellner at Internal Services, which includes Human Resources, the company's corporate administrative functions and Boeing Shared Services Group.

Foxtel Announces New Marketing Appointments

Foxtel has announced a re-structured Marketing Department and the appointment of a General Manager, Marketing, following last month's decision to merge the Television and Marketing operation into one unit.

Brian Walsh, Executive Director, Television and Marketing, announced the appointments, which will see Foxtel's Marketing Department divided into General Management & Subscriber

Marketing, Brand & Creative and Communications.

Richard Howarth has been appointed to the new role of General Manager, Marketing. Richard joins Foxtel from Austereo, where he was Group Marketing Director, and has an extensive background in marketing and media.

Prior to Austereo, Richard held positions including Group Communications Manager for Coca Cola Australia and National Advertising Manager for Coca Cola Australia, Philippines and Oceania. Richard's agency experience includes an engagement with DDB Australia as Group Account Director for News Limited, McDonald's and Dairy Farmers.

Richard will supervise the day to day operation of the Marketing unit and assume direct responsibility for Subscriber Management, Advertising Agency Management and Media.

Force Names Victor Gonzalez CEO



Force, Inc. has named Victor Gonzalez as CEO, replacing Will Cutchins, who retired in December 2004. Victor Gonzalez is a seasoned executive with a

proven track record of creating top-performing sales teams within the telecommunications industry.

Gonzalez's expertise spans many areas, including sales leadership, strategic planning, product development, wireless design, network planning, systems design, marketing management, engineering and finance. At ADC Broadband, he served as a vice president and led the

Executives Moves

transformation of the entire sales and marketing organization from \$14M to \$98M in a little over two years. He has a Bachelor of Science in Electrical Engineering and an MBA.

Force, Inc. specializes in the design and manufacturing of fiber optic transport equipment for a variety of private and public network applications. Force's core competence focuses on optical transport of video, audio and data. Product solutions include Satellite L-Band and IF, Wireless and Mobile Communications, Digital Broadcast for Networks and Cable Service Providers and CATV video distribution for Private Networks and Educational Distance Learning applications. Force also offers optical transport for control instrumentation, security and surveillance.

Canadian Space Industry Pioneer Leaves Com Dev After 30 Years of Service

Dr. Val O'Donovan, has resigned from his duties as chairman and director of Com Dev International Ltd's Board of Directors (TSX:CDV).

Dr. O'Donovan founded Com Dev as a start up company based in Montreal, and in the intervening period, took the company from a fledging operation, to a globally recognized leader in its industry. The company now employs over 800 people in Canada, the United Kingdom, and China. Dr. O'Donovan's contribution to Canada and his community were recognized when he was awarded the Order of Canada in 2003.

Commenting on Dr. O'Donovan's decision, deputy chairman Keith Ainsworth said the company owes a debt of gratitude to Val O'Donovan. "His pioneering vision of space, of Canada in space and Canada's place in the world in general,

drove Com Dev from a tiny start-up company to where it is today as a globally recognized leader in space technology. I know his decision to retire was made only because his ongoing poor health made it impossible for him to maintain the high level of commitment and enthusiasm that he gave to Com Dev throughout his career," he said.

DirecTV Group Vice Chairman Eddy W. Hartenstein Retires



DirecTV Group, Inc. (NYSE:DTV) Vice Chairman, Eddy W.

Hartenstein, has elected to retire effective Dec. 31, 2004.

Hartenstein's career with the company began in 1972 when it was known as Hughes Aircraft Co. He became the president of DirecTV at its inception in 1990, and remained its chairman and CEO through December 2003 upon the sale of General Motors' interest in the company to News Corp. Since its launch in 1994, DirecTV has grown to become the second-largest pay television service in the United States, with more than 13.5 million customers.

"Eddy has not only been a colleague but a friend for more than 10 years," said Chase Carey, president and CEO of The DirecTV Group. "His expertise and counsel have been critical to our progress during the last year. His leadership of DirecTV from its infancy through the complicated exit of GM has been invaluable."

Rupert Murdoch, chairman of The DirecTV Group, only had kind words for Hartenstein saying, "Eddy deserves

tremendous credit for the creation and growth of DirecTV as a leader in the television world today."

"The highlight of my career has been these past 15 years while we conceived and brought to reality the best experience in television, which today is viewed in one of every eight television homes across America," said Hartenstein. He added he had been privileged to work with the enormously talented men and women at DirecTV.

Omneon Appoints Greg Hoskin as VP of EMEA Sales

Omneon Video Networks has appointed industry veteran Greg Hoskin as vice president of Europe, Middle East, and Africa (EMEA) sales. To meet the increasing demand for Omneon server solutions within this market, Omneon has also expanded its technical and operational support services with new positions filled by Graham Aedy and Gary Pass.

"Omneon is experiencing a significant increase in business opportunities within the EMEA region, and Greg's extensive background in sales and marketing for broadcast system solutions brings another level of capability to Omneon," said Dan Marshall, vice president of worldwide sales for Omneon. "Greg's experience with large account management and managing sales of broadcast technologies will further position us to capitalize on the increasing demand for Omneon's leading server technology."

Hoskin has 27 years' experience in management, sales, and engineering for the broadcast and media manufacturing industries. He most recently served as senior vice president of sales and product strategy for OmniBus Systems, where he was responsible for key accounts and

SM

New Products

DirecTV to Launch SKY TG24 on Dec. 7



DirecTV, Inc. has announced it will launch the Italian news channel, SKY TG24, on an a la carte basis, to both residential and commercial DirecTV customers.

SKY TG24 is the Italian channel dedicated entirely to news with live news features every 30 minutes. Concentrating mainly on national and international news and reports, SKY TG24 provides an objective viewpoint on happenings in Italy and around the world. Besides bulletins, there are also in-depth features and reports, and debates with guests in studio. During the weekend, the channel dedicates much time to sports, and in particular, the Italian Football Championship.

Broadcasting from the SKY studios in Rome, SKY TG24 has bureaus in major cities around the world, as well as six regional offices in Italy. SKY TG24's editorial office is comprised of more than 300 people, out of which 100 are journalists.

“With the addition of SKY TG24 to the DirecTV international programming lineup, the more than one million native Italian speakers living in the United States will find it easier to stay connected to current events in their homeland through DirecTV,” said Aaron McNally, vice president, International, DirecTV, Inc.

Tachyon Networks and Xplornet Launch Commercial Grade Satellite Broadband Services in Canada



Tachyon Networks Incorporated and Xplornet, one of Canada's broadband wireless service provider, have signed a strategic partnership that will offer high-speed broadband satellite services to government agencies, enterprises and small- and medium-sized businesses in Canada and North America.

Xplornet, formerly known as LinCsat, is one of Canada's largest and fastest growing broadband wireless service provider. The

company brings an extensive enterprise sales and service infrastructure to the partnership, providing marketing, sales, installation, maintenance, first- and second-level customer support and

billing. Tachyon is providing the satellite network infrastructure, gateway and patented customer premise equipment (CPE) and network monitoring that enables terrestrial-like speed and performance with burst rates up to 1.544Mbps and guaranteed Quality of Service (QoS).

“One of our key goals is to ensure that our customers in rural regions receive the same reliable broadband solution as urban enterprise subscribers,” Bruce Barr, president for Xplornet said.

The partnership will distribute two of Tachyon's pre-eminent solutions that will be available immediately. Xplornet will offer a new solution to its customers with Tachyon Enterprise, a sophisticated, high-bandwidth satellite broadband solution used by large enterprises for backup to terrestrial service or for primary connectivity to geographically remote facilities.

Tachyon Express will be offered as a service suite priced and designed specifically to meet the speed, reliability and performance requirements for small- and medium-sized businesses with multiple locations.

Codem's MD-2020 LHGXA/FTSAT Integration Kit



Codem Systems, Inc. has recently released the MD-2020 LHGXA/FTSAT Integration Kit, a Commercial Off The Shelf (COTS) solution that includes Codem's FAC-500 Antenna Control Unit with embedded tracking receiver, Servo Drive, Tracking Down Converter,

and FAC M&C software that can be loaded on the FTSAT Laptop or reside on an optional Laptop dedicated to the control of the antenna.

The FAC-500 ACU and associated Monitor and Control software allows for simple, automated satellite acquisition and tracking, says Codem Systems.

The new product utilizes the existing equipment that was previously DISA certified with the LHGXA housed in a 6 RU transit case. The electronics case provides a Signal Entry Panel that terminates all LHGXA or QRSA cables and requires no modification to either of the antennas. The electronics case provides LNA power, AC power to the antenna, route the received RF to the FTSAT electronics, and monitors all safety interlocks on the LHGXA.

The kit interfaces with the FTSAT electronics (HPA, Modem, and Down Converters) high capacity X-Band transmission and

NEW PRODUCTS

reception. The panel provides for AC power input and 70 MHz beacon signal. This approach requires no modifications to the LHGX or QRS Platform, ACU Kit and DISA certified HPA from the FTSAT system.

Currently Codem is under contract to deliver a quantity of MD-2020 Kits to support the war fighters' satellite communications needs.

Bridges TV Launches on GlobeCast WorldTV Direct Satellite Television Service in America

Bridges TV, the first-ever American Muslim television network in English, began broadcasting via the GlobeCast WorldTV direct satellite television service beginning Nov. 30.

GlobeCast said Bridges TV joins a line up of 122 international and multicultural television and radio channels available exclusively through GlobeCast WorldTV Direct Satellite in America, including the largest selection of Muslim-oriented and Middle Eastern channels. Bridges TV will also be available through multiple cable systems and on the Internet.

Bridges TV will appeal to an under-served niche market. The American Muslim market, an affluent, young and well-educated demographic, has gone largely untapped. According to Bridges TV, there are seven million Muslims in the U.S. and one million in Canada. 67% hold bachelors degree or higher as compared to 44% for the total U.S.; 33% of American Muslims hold Master's degree or higher as compared with 9% of Americans overall.

Bridges TV premieres with Bridges News, the network's original news show hosted by former NBC news producer Asad Mahmood, as well as programming that includes talk, health, cooking and children's shows, sitcoms and movies.

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CEO Mo Hassan said Bridges TV will fill several important gaps not only on the airwaves but in our society. "Bridges is a place, first and foremost, for American Muslims to come home to and see themselves accurately portrayed. In terms of America, Bridges TV is a space where bridges of friendship and understanding can be developed and promoted," he said.

Globalstar Extends Satellite Data Service to All of Europe and Across the Atlantic

Satellite phone service Globalstar said it will offer simplex, or one-way, data services to customers using its European gateway located in France. Combined with the current simplex data coverage offered by the Globalstar gateway in Turkey, this expanded coverage will more than double the area currently served by the company's simplex data service to include all of Europe, the North Atlantic, and North Africa.



new service enhancement is the result of a hardware upgrade to the European gateway, which is operated by the company to provide satellite customers access to round-based public telephone and data networks. Globalstar simplex data service has already been available in the U.S. and Canada since 2003, and in the Middle East and parts of Europe since earlier this year.

The simplex data offering is a low-cost, one-way satellite data service that allows customers to use Globalstar simplex modems and integrated solutions to track mobile assets — such as vehicles and marine vessels — using GPS or other location-based software. The service can also be used to monitor and send information from a wide array of industrial and security applications for fixed assets, such as environmental measurements, utility meter readings, or the state of various devices or instruments. **SM**

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COVER STORY

A Look at the Satellite Industry - Then and Now

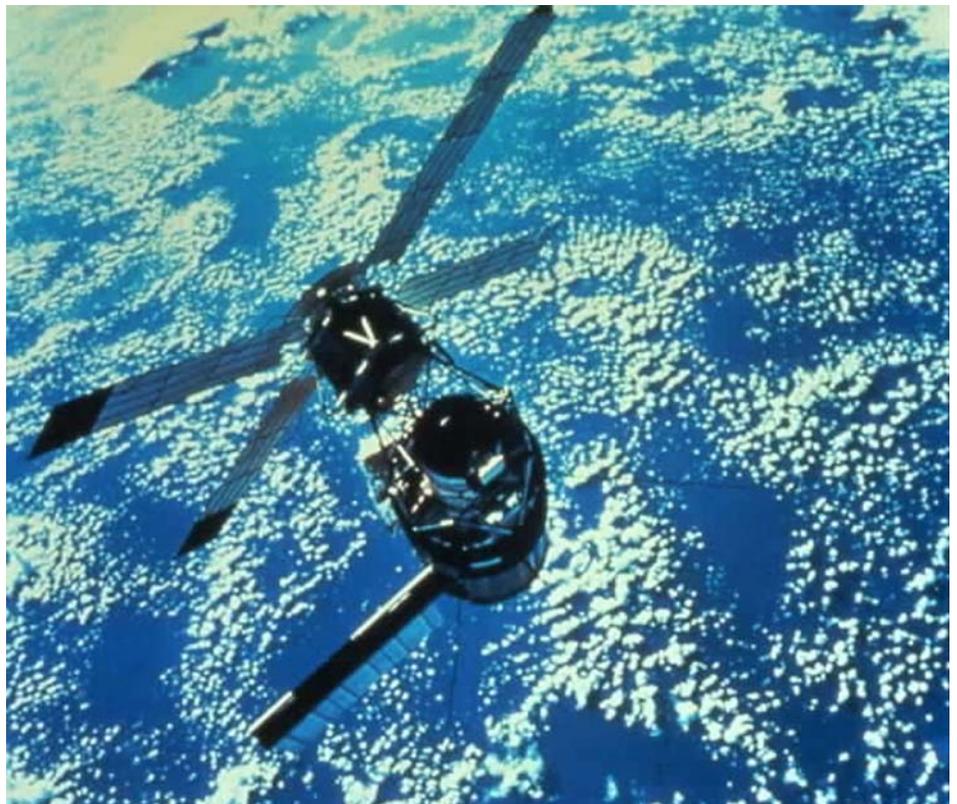
by Bruce R. Elbert
President, Application Technology Strategy, Inc.

In my last column in SatMagazine, I referred to 2004 as a watershed year, largely based on the changes in satellite ownership and operation. Let me explain why I felt this way and, by way of a review of some history, address what the new structure might mean.

The Early Years

The inauguration of commercial satellite communications by COMSAT in 1965 brought in the era of true global services by a single company. Thanks to an innovative satellite design by Hughes Aircraft Company along with the success of launching into geostationary orbit by the NASA Delta rocket, we saw that even a 76-pound weakling spacecraft named Early Bird could do impressive things. An ITU frequency allocation at C-band provided the spectrum needed to begin the era of geostationary satellite communications. COMSAT was a stock company, owned partly by public shareholders and partly by telecom companies that were also users of the system. However, the industry really didn't get its grounding until Télésat Canada was formed to implement the first domestic system. Following the regulatory innovation in the US called "Open Skies", the number of North American satellite operators increased to four.

The majority of these satellite operators in the 70s and early 80s all used C-band and were connected to telecom companies, namely AT&T, GTE and Western Union. Intelsat, formed by



COMSAT, was owned by a consortium of telecoms. However, an electronics and aerospace company, RCA Corp, decided to start a satellite operator that would get its birds from their manufacturing division, Astro. The early success of RCA American Communications (Americom) set in motion the first big change in industry structure, because Hughes decided to start its own satellite operator as well. Loral followed suit, and these companies began to dominate. The ascension of satellite manufacturers cum operators brought with it the withdrawal

of the telecom companies from satellite ownership.

The western European PTTs liked the Intelsat model rather than the North American "Open Skies" approach, and created a quasi-government operator in the form of EUTELSAT. Rather than the tried and true approach of C-band transmission, EUTELSAT chose to go with the higher, less-established spectrum at Ku-band (a subsequent ITU allocation). The benefits of Ku-band, e.g., its non-conflict with terrestrial microwave

COVER STORY

systems at C-band and the potential for smaller antennas, were motivators for this approach. However, an added benefit was that it would be something entirely different from the American model, giving European manufacturers a leg up in the international market for spacecraft and ground stations. The result is that Ku-band has become a fixture of the industry, recently overcoming the domination of C-band.



government activity. However, the impact on the insurers who stood behind the buyers of satellites and transponders took a licking. A major underwriter, Lloyds of London, was so battered that many are still licking their wounds. The availability, and unavailability, of cheap launch insurance is another driving force for

Getting to Orbit

In the background but very visible (and audible) was the launch industry, led at the time by McDonnell Douglas with their Delta. RCA gave Delta a boost by paying McDonnell Douglas for a payload upgrade (the first ever private payment for launch vehicle development). However, NASA decided to launch a new direction with the Space Shuttle, formally known as the Space Transportation System (STS). This was to take over from the expendable LVs, based on the expected (but unproven) economic benefits of this concept. While the US banked on a reusable manned system, the Europeans bet their money on a commercial expendable vehicle called Ariane. The tragic loss of the Shuttle Challenger ended the young life of a number of heroes, including that of Greg Jarvis, my friend from Hughes; it also killed the dream of a commercially-viable STS. This caused a huge glitch in the process of getting spacecraft into orbit, because not only did we lose the Shuttle, but the venerable Delta had its own mishap. Fortunately, Ariane was ready to pick up some of the slack, as did Martin Marietta's Titan. Other LV systems, like the General Dynamics Atlas and the Japanese N and H series, got into the fray as well.

The launch industry reorganized itself as a commercial sector rather than a

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change in the makeup of satellite operators. It is important to note that Lockheed Martin and Boeing entered into joint ventures with rocket manufacturers in the former Soviet Union to get Proton and Zenit, respectively, into the market.

A Second Life

By 1990, the game of satellite service marketing settled down in the US to a competition between what we referred to as the three generals and Ma Bell (the three generals being General Electric, General Motors and General Telephone and Electronics; Ma Bell was an affectionate name for the Bell System, owned by AT&T). A second change in industry structure when entrepreneurial satellite operators appeared. The first of the breed, PamAmSat, was created and owned by Rene Anselmo, who paid out of his own pocket to put his first satellite in orbit. He fought and won the battle with Intelsat to compete in the trans-Atlantic marketplace. AsiaSat was formed by a telecom company, Cable and Wireless, and two Asian companies: CITIC from the PRC and Hutchison from Hong Kong. Other such operators established in Thailand (Shinawatra), Malaysia (Binariang), Indonesia (Satelindo) and Luxembourg (SES). The latter became so successful, it has grown to be the largest operator in the world. These entrepreneurs cared most about what they were paying and that the satellite ended up in the right orbit position with all of its transponders working properly. As long as you were buying a "standard" satellite with a known track record, some significant risks of putting hardware in orbit were reduced.

Post 2000

The telecom companies and aerospace manufacturers have since decided to divest their orbital assets and concentrate on their core businesses. So, who would they sell their multi-billion dollar satellite systems to? The answer ap-

peared in the form of investment bankers and leverage buyout groups that, as I said in the last article, seek to make money. They likely have no strategic interest in owning satellites except that the cash flow is good and the assets can be valued. The latter was discovered in the 1980s when owners of satellites and transponders found they could borrow money cheaply by selling and leasing back these assets. The difference now is that the satellite operator gives up its ownership and control position.

The next challenge for the new class of owners is to decide where to go from here. Do you do some financial engineering to reduce debt and look for another buyer? A twist on this, just announced by a newly-privatized PanAmSat, is to sell off part of the company in an IPO. Or do you seek to bulk the company up through further acquisitions in the same or related businesses? SES just closed on its acquisition of Verestar, an operator of several teleports. Or do you decide to roll up your sleeves and grow the business internally? This strategy is allowing JSAT, the largest operator in Asia, to extend its reach to North America with the Horizons 1 Ku band satellite. We will probably see these, and other, approaches tried in the coming years.

The manufacturing segment is likewise not what it used to be. During the early years, satellite manufacturers designed and made nearly 90% of the hardware they launched. Today, they operate more like systems integrators who design the basic vehicle and adapt payload hardware obtained from specialists in North America, Western Europe and Japan. Suppliers in Australia, China, Korea and India are likely to become competitive in space hardware as well. The prime contractors pull the pieces together, perform the necessary qualifica-



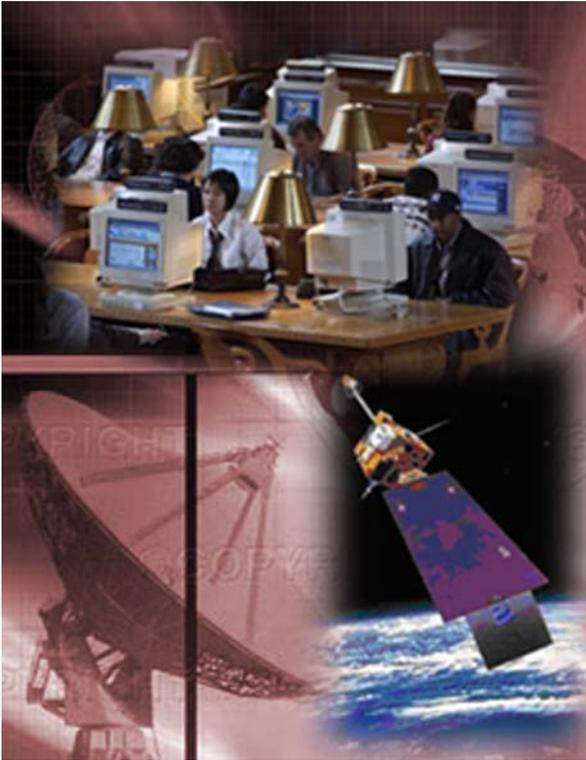
tion and production tests, and support the placement into orbit. Some of the biggest among these companies also supply the launch vehicles that go along with the spacecraft.

The favorable economics of big satellites in terms of cost per transponder are in balance with the current buyers' market in satellite services. Transponder rates around the world are not rising, providing an opportunity for service providers of all types. Construction of satellites remains well below the peak of 1997, a time when many spacecraft were bought in anticipation of replacement as well as service expansion. After the trough in 2002, the demand for spacecraft hardware is moving higher, but there is a large overhang of manufacturing capacity. These factors will probably result in an overall reduction of manufacturing capacity, although the more successful aerospace companies will make improvements and possibly purchase some of the facilities that otherwise might be closed down.

Leveraging the Future for Fun and Profit

By taking the lead in satellite operation, the mega-investors have the potential to take the industry to the next level. This is due to their access to capital

VIEWPOINT



markets for the money to buy, launch and operate the new generation of more capable satellites. To attain an adequate revenue “top line”, they will need all the help they can get on the marketing side. The key to building a good system (e.g., one that meets the needs of users) is to spend the time and effort to get the requirements right. So, the new leaders must get deep into the minds of current and prospective buyers of satellite-based services. Of course, the big trick is to identify these buyers even before they know that they are the best targets.

The other side of the coin is to specify the communications and vehicle design requirements so that the right satellite can be built and launched within the window of opportunity. The documentation needed to properly buy a satellite is in and of itself quite imposing – technical specifications to make sure the satellite you want is actually constructed; terms and conditions that assure that the contractor will perform as agreed; testing requirements that verify that the hardware

works as specified and will last the requisite 15 years in orbit; and statements of work to provide the buyer with a complete listing of what is being bought and how the buyer can track the program from beginning to a successful end.

Another important aspect that a newcomer to our industry needs to embrace is the value of good regulatory policy and spectrum management. Right now, there is a reasonable balance between supply of spectrum at C and Ku bands and demand in terms of the 200 or so geostationary satellites currently in service. This, however, is not a static situation for a number of reasons. For example, powerful terrestrial competitors are

approaching the gates to the satellite industry’s comfortable regulatory environment. The December 15, 2004, issue of *The Wall Street Journal* reveals that many players on the terrestrial side are clambering at the FCC to get more microwave spectrum moved over into their column. Giants like Microsoft and Intel see big growth in local uses of wireless to multiply the success of WLANs using the IEEE 802.11 standards and personal LANs using Bluetooth. This could encroach on the “new” regime at Ka-band and possibly threaten our

current bread-and-butter orbit-spectrum resources at C and Ku bands.

A Galaxy Not So Far Away

While it’s impossible to predict what satellite operator strategies will work best in coming years, consider the past as prologue with this historical case study of Galaxy 1. As I mentioned above, Hughes entered the satellite operating business. They chose the reliable HS-376 satellite, which spun for stability and carried 24 C-band transponders. The management team, under Tom Whitehead, conducted a careful search of potential users of whole transponders and arrived at the conclusion that they could come from the burgeoning cable TV industry. So, the marketing team went out and visited every cable network then in existence. At the same time, a regulatory strategy (without which the business could not move forward) was conceived to get the OK from the FCC to sell transponders, condominium style, rather than renting them, common carrier style. The FCC concurred that this was in the public interest, and Hughes was successful in the marketing the first blocks of transponders to HBO and Turner Broadcasting. With these “anchor tenants” in place, other major players in cable programming followed suite. The satellite was launched in July of 1983 with all 24 transponders taken up – for the life of the satellite. Even now, that’s what satellite marketing is all about. **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

FEATURES

“New” ArabSat Unveiled

Extra satellite likely, IPO down the road

by Chris Forrester

It is traditional among many Middle East-based companies to stay silent about their financial progress – or otherwise. It is considered somewhat vulgar to discuss matters like profits or marketing and especially corporate efficiency. And while perhaps the kindest description of Saudi Arabia-based ArabSat might have been “sleepy”, a recent clients’ gathering (Arabsat’s 1st Broadcaster Customer Forum) in Beirut was anything but lethargic. In fact, ArabSat’s new breed of senior managers made it perfectly clear that they are refreshed, reinvigorated – and keen to win an increased market share.

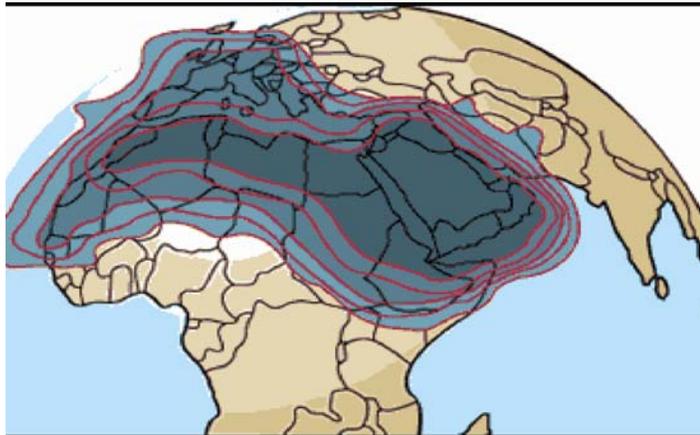
There’s even talk of ArabSat being prepared for an IPO down the line. Khalid Balkheyour, president and CEO at ArabSat, which is owned by a consortium of 21 Arab nations, says the Board and the general assembly of signatories is looking for fresh ideas. “They want ArabSat to be run as commercially as



Arab President and CEO Khalid Balkheyour.

possible. Nothing is ruled out. Our ownership might present some challenges if we were talking about a major item like consolidation or partnerships, but let’s see what presents itself. We have no candidates at the moment, either for merging or acquisition, but if there’s a business case we’ll pursue it. In terms of an eventual IPO, we’d like to think we would be well placed in a couple of years. I suspect it would not be the whole of ArabSat on offer, only a portion. There are thoughts, and it is a recognition of what’s happening in the real world.”

Balkheyour says with the upcoming launch of two 4th Generation birds (4A and 4B) changes were needed along with “a new attitude” to how Arabsat does business. Delegates were given an unambiguous look at the company’s business plan, from now to 2008, and how it would differentiate itself from its rivals. Unmentioned, but not far from its thoughts was Cairo-based NileSat and its progress from zero to the region’s undoubted digital Hot Spot over the Middle East. Balkheyour said



ArabSat’s FSS market share*

ArabSat	38%
Intelsat	23%
NileSat	13%
Eutelsat	9%
New Skies	5%
PanAmSat	5%
Other	7%

*Mid-East/North Africa (MENA) region
Data: Euroconsult 2002/ArabSat

FEATURES

ArabSat's Constellation 20 deg East	26 deg East	30.5 deg East
ArabSat 2A (inclined)	ArabSat 2C ArabSat 2D ArabSat 3A <i>ArabSat 4A (05)</i> <i>ArabSat 4B (06)</i>	ArabSat 2B

Data: ArabSat

ArabSat's 26 deg E Hot Spot		
Name	Transponders	Status
ArabSat 2C	24, C-band	Leased from PanAmSat (PAS-5). Current lease expires Jan 2007
ArabSat 2D	20, Ku-band	Leased from Eutelsat. Current lease expires April 2006
ArabSat 3A	10, Ku-band	Launched 1999. Major power failure Dec 2001 affects 50% of craft
ArabSat 4A	44, Ku/C	Nov 2005 planned launch (replaces 3A, then orbital spare)
ArabSat 4B	32, Ku-band	Feb 2006 planned launch, secures BSS ITU frequencies
ArabSat 4C/5A	undecided	Back-up craft. Not yet ordered

Data: ArabSat

8%, "and perhaps more" admits Balkheyour. He also says ArabSat's revenue growth is already in line with these trends. This year (2004) he says he expects the company to achieve revenues of some \$140m and profits of about \$60m. "The year is not yet over, and we are on track," said Balkheyour. "But we have a target to grow next year by about 10% in total. There are about 200

channels on either ArabSat or NileSat. And we know the TV market is growing strongly, and there's a good potential for us. Almost everyone seems to be planning new channels, and we'd like to carry most of them. In the most recent quarter we have added new channels: MBC has launched its children's channel, [music channel] Rotana has added a movie channel, on top of a classical

that ArabSat was currently looking very closely at whether to convert its existing option on an additional craft (either 4C or a next-generation satellite 5A) from Astrium (as prime contractor) and Alcatel (payload).

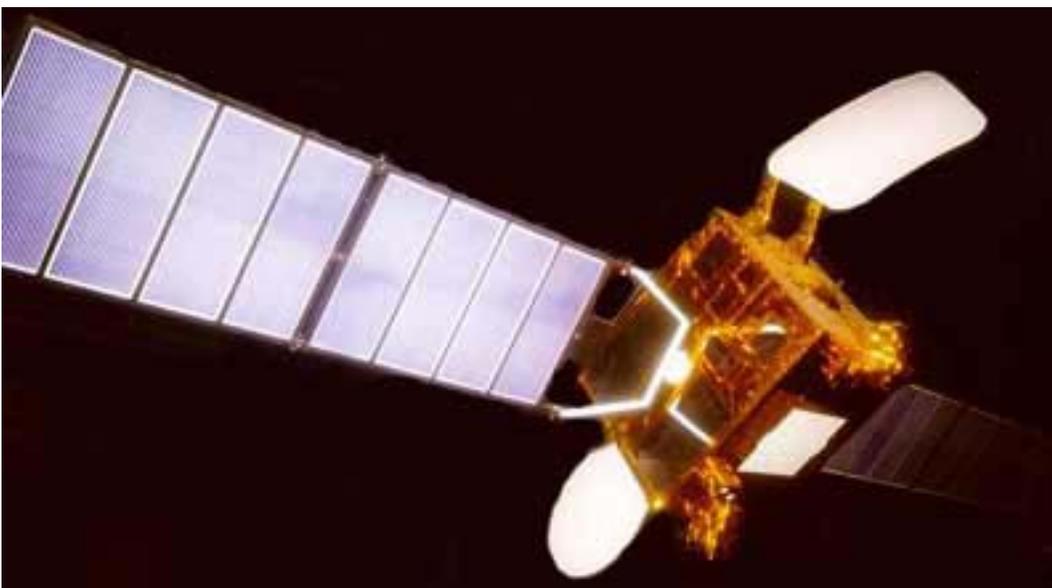
ArabSat's immediate goal is to win a much greater portion of the region's \$500m FSS market (2005 estimate), itself growing at an overall CAGR of at least 3%, and where broadcasting represents about 60% of this total or \$285m, according to assorted industry estimates. However, strip the non-broadcasting element out and the TV sector is growing at much closer to 7-

music channel. There are others talking about kids channels, news and entertainment."

Interestingly, ArabSat at its recent seminar asked delegates whether they saw their own demand increasing, and if so, in which sector? HDTV was one option, new channel launches another, geographic expansion a third. The responses were all positive, and much of the discussion focussed on topics like HDTV, its likely introduction by various broadcasters and new channel launches. Many clients were already tapping into ArabSat's direct links with operators like Eutelsat and SES

Global, using rented capacity on the rival's craft for Arabic-language bundles beamed into 'foreign' markets like Europe and the USA.

Balkheyour, and sales director Nabil Shanti, stressed that ArabSat's old tightly structured rate card was a thing of the past. Balkheyour says in the past they were obligated by their signatory members to limit flexibility. That's now changed. Balkheyour says competitive pricing is a necessary fact of life, and ArabSat now has "pricing flexibility" where advantages and discounts will be given



FEATURES

ArabSat's pricing policy*

- Incentives for
 - Capacity leases, long-term
 - Value-based (services more than basic leases)
 - Volume-Duration-Payment
 - Special discounts for community services (Educ/medicine)

Data: Arabsat

depending on a customer's status, volume of capacity booked and other incentives. "Every commercial company competes to get more customers, but the real challenge is keeping those customers," said

(Dubai), and the Levant including Saudi Arabia (based at its Riyadh HQ). "We want to delight our customers and help them to build their businesses," said Shanti. "We will also create attractive terms for new private broadcasters to bring their business to us." He also said ArabSat would be revisiting their existing contracts ahead of the launch of the 4th generation satellites, especially in regard to the higher radiated power-levels on 4A and 4B.



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ArabSat's CEO. This can only happen "by building the customers' trust toward us and developing mutual relations into a strategically built partnership based on common interests," he added. Consequently, part of the operational change is a flurry of new regional offices opened so that ArabSat can get closer to its clients.

Sales Director Nabil Shanti said ArabSat was strengthening its operation for the benefit of all present and future customers, with new regional offices for North Africa & Egypt (Cairo), Europe (based in Paris), the Gulf including Asia

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Other Beirut gossip

- **Al Jazeera International**, the Al Jazeera English-language channel due to launch in November 2005, will be in HDTV from Day 1 according to Hassain Jaffar, a member of the Al Jazeera board.
- **Abu Dhabi TV** is already making programming in HDTV, and has just co-produced its first all-HDTV drama series.
- Egypt's giant public broadcaster **ERTU** is looking at its HDTV options, which include equipping certain studios with HDTV equipment for experimental and training purposes, according to Hamdy Emara, chairman of ERTU's engineering sector.

“We have been in discussions with government and inter-governmental bodies about new satellite-based services, for use on ArabSat 4C or 5A. They could be military, or navigation or aeronautical. In other words we are looking hard at alternate uses, and this includes Broadband especially as local markets liberalise.”

Khalid Balkheyour, president and CEO

However, some delegates specifically questioned the wisdom of including such a high number of C-Band transponders on ArabSat 4A. Balkheyour admitted that part of the C-Band plan was responsibility to existing clients who had no current wish to abandon C-Band transmission. “Somebody renewed only last month for another 3 years.” He added that as clients transferred to Ku-Band digital there remained many opportunities, not least in C-Band digital transmission, C-Band over Africa (still highly-prized), Occasional Use and back-haul, “and even trunking. They will not go to waste,” said Balkheyour. “Satellites are designed and then built with a minimum 15-year operational life. We are in a transition period for C-Band, but we expect most of the transponders to be used for TV for at least 4 to 6 years, maybe longer.” Balkheyour said ArabSat's new flexible pricing policy might also be useful, in tempting clients to keep their C-Band contracts alive for a few more years. “If we were starting the design phase today then probably we would have reduced the number of [C-band] transponders,” said Balkheyour.

ArabSat's competition comes from the aforementioned NileSat, as well as other local players like Eutelsat and Turksat which have signals that spill over into ArabSat's back yard. More recently Intelsat has linked with 'NoorSat' to push a number of dual-emitted DTH channels under the Orbit brand, which ArabSat has carried for years. Asked whether he feared losing the Orbit channels to NourSat, Balkheyour said: “It concerns me and they are in position, so we would be stupid to

ignore them. We recognise how competitive it is, but I do not think it will end up being a third 'hot spot' for the region.”

A follow-on meeting of ArabSat's telephony and data customers was held last week in Damascus, Syria. Additionally, Balkheyour said he saw increased TV demand across all bands from interactive services, EPG-type data and other services. To date, there has been only limited interest in such services from Arab broadcasters. Meanwhile, Balkheyour says ArabSat has been quietly building relationships with local partners (like uplinker SamaCom in Dubai, and GlobeCast generally, plus the Jordan Media City in Amman) and is looking to establish a similar digital TV entry platform in Cairo for the growing number of private channels emerging in the country.



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

SM

FEATURES

20 Years of VSAT History and A Look Into the Future

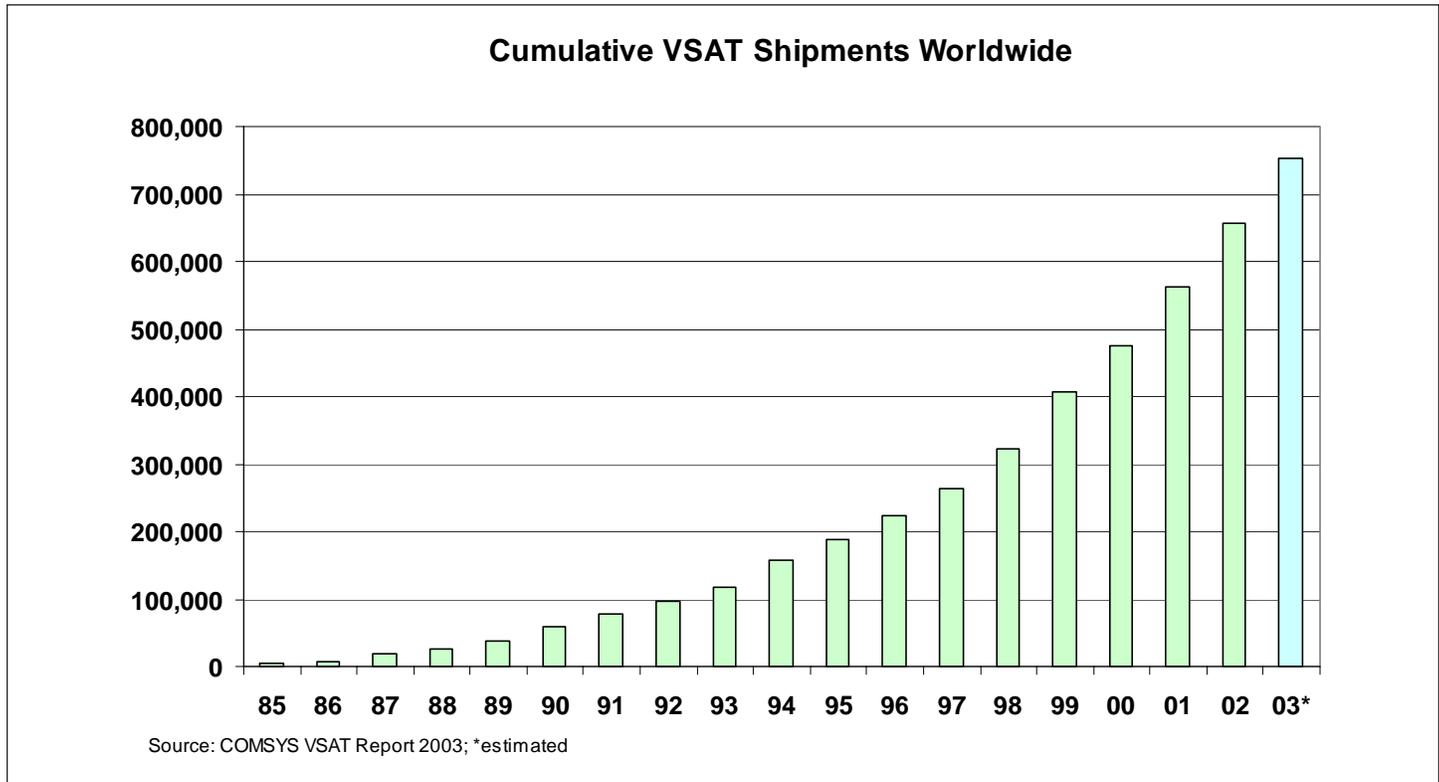
by John Puetz

Sometimes looking back on where we once were can provide a fresh perspective and appreciation of how far we've come and where we are yet to go. As I look back on 1984, I fondly remember working for several of giants in the satellite industry—Andy Viterbi and Irwin Jacobs at a company called M/A-COM Linkabit. Back then, an SCPC satellite modem took up 15 to 20 inches of rack space, with the modulator in a separate chassis from the demodulator. And the latest FEC coding scheme was Viterbi's own. Now we have an entire modem, operating at incredibly high data rates, with much more powerful coding using 8-PSK and 16 level modulation

schemes, occupying less than two inches of rack space—oh yes, no fan required.

I was fortunate enough to work with real pioneers in the VSAT industry and was part of the original engineering design team that created the first TDMA VSAT terminal—what came to be known as the personal earth station (PES). It was cutting edge indeed and Sam Walton (WALMART) and companies like Chevron knew it would play an important role in their businesses. The project team and the business were turned into Hughes Network Systems and the rest—as they say—is history.

While the original PES system was archaic by today's standards—it was a marvel back then; with a maximum inroute capacity of 64 Kbps, 512 Kbps outbound carrier and using 1.8M antennas it supported a variety of data formats (SNA, HDLC, SDLC, X.25) at 300 to 2400 bps and even voice services using the very latest in 16 Kbps compressed voice (ADPCM and RELP). The network management system was a VAX machine that was the size of several large business desks and ran a UNIX based custom software package—no graphical user interface screens on those operator consoles—the concept hadn't been invented yet!



FEATURES



Now fast forward to today. Broadband VSAT terminals operating with 2 to 8 Mbps inbound and up to 45 Mbps outbound carriers; remotes barely larger than my laptop computer, with an integrated IP router, IP acceleration and can receive streaming video. Voice, no problem; just plug in VOIP phones or connect to a PBX. Oh yes—almost forgot—IP video-conferencing works great too.

One of the true tests of well-designed technology is how transparent it is to the end-user experience. I remember in the mid-90s when there was an unfortunate black-out of satellite services to a large number of gas stations across the U.S. Customers and gas station attendants had to revert back to the old-ways of swiping credit cards—causing unexpected delays and lines long enough to be on national TV news programs. National personal paging services, which were distributed regionally by satellite, were also interrupted. Life wasn't quite the same for millions without their satellite service working quietly in the background.

Businesses and industries around the world have been positively impacted by VSATs over the past 20 years. Over this time period, over 700,000 TDMA VSATs have been shipped worldwide¹. People not familiar with the details of this industry are surprised to find that the

majority of these terminals are used in the United States. Most people don't realize that the key benefits of VSAT technology, ubiquitous uniform service, far-reaching wireless connectivity with a variety of services and low-cost are very attractive even in a "wired" country like the U.S.

The retail industry in the U.S. discovered these benefits in the mid-80s, which stimulated a great deal of the VSAT industry growth for years to come. World-wide many different industries have come to rely on VSATs to conduct business: banks, financial institutions, stock markets, educational systems, government agencies and even the military.

In the early 1990's I had the pleasure of being involved with the transformation of the radio broadcasting industry with the marriage of VSAT technology and digital audio compression. Back then we used a compression technique called MUSICAM which later became known as MPEG2. Distributing CD quality music programming to dozens or hundreds of radio stations at one time was revolutionizing. These integrated systems (both one-way and two-way) spread quickly across the U.S. to Europe, Latin America and Asia. Today, I listen to XM Satellite Radio in my car—a rich mixture of programming and sound quality.

While most of my 20+ years of experience has been on the terminal equipment side of the industry, I've come to appreciate the many challenges and nuisances of delivering end-to-end communications services. The many successful service providers world-wide are the true unsung heroes of the VSAT industry. Their success requires them to be very good at a wide-range of disciplines; computers & technology, data networking, telephony & video, system

integration, installations, operations and customer service. And service providers operating in mobile, off-shore or hostile environments (oil rigs, ships/vessels, energy exploration, SNG, government/military) face even greater challenges. Service providers bridge the very big gap between end-users, equipment manufacturers and satellite operators. And in some instances service providers can be the stimulus for break-throughs in equipment and satellite designs.

One such example is Wild Blue (www.wildblue.com). With the successful launch of its first satellite payload last summer on Telesat's Anik F2 satellite, the U.S. based broadband service provider is one step closer to its service launch scheduled for 1st quarter 2005. The new Ka-band spot beam technology will allow multiple re-use of the same frequency in different geographical areas (akin to mobile phone cells), providing higher total system capacity at lower costs than traditional Ku-band satellites². WildBlue's offering is expected to be particularly attractive to the estimated 25 million homes and small businesses that don't have access to other broadband Internet options. ViaSat (www.viasat.com) is providing the remote terminal equipment that includes a new return channel approach based on the DOCSIS® (Data Over Cable Service Interface Specification) networking standard, used in cable delivery systems throughout North America. This rather innovative approach is at odds with the DVB-RCS standard. Part of the motivation for using the DOCSIS standard is to take advantage of the large back-office tool suite available for operating and administrating huge subscriber populations—certainly a key concern for any success minded service provider. Wildblue's rollout of their under \$50 per month service in 2005 will be watched by Wall Street and many others in and out of the satellite industry.

So what lies ahead for the VSAT industry? Further consolidation in the

FEATURES



equipment manufacturer and service provider ranks is very likely to continue. A business success for Wild Blue would provide a much needed and huge boost to satellite's entrée into the consumer/business broadband market. The debate over DVB-RS and DOCSIS for satellite return channel technology will continue until there's a clear production winner—likely not to be declared until 250K units (or more) units have shipped.

Fortunately, successful equipment providers continue to listen to their customers and market needs. Reliability

and price are at the top of most customers' must-have list. Some equipment vendors are keen on differentiating themselves amongst their peers and capture more market share. Around the corner you'll find further integration of desired features into remote terminals—Internet/content caching, network security and access, data compression, content delivery, and even room for customized “roll-your-own” applications. Terminal pricing will continue to fall somewhat, but feature rich versions will command, and get, top price.

Successful service providers will continue to meet the challenges of their markets and customer needs. Competitiveness is everywhere, so the most successful will continue to demonstrate leadership, technological awareness, service delivery and customer satisfaction. In the end, service delivery and reliability have more staying power and value to customers than having the lowest price.

Perhaps one of the most important lessons to learn from these past 20 years in this industry is that ongoing success is closely tied to delivering what your customers require on a consistent basis.

SM

(Footnotes)

¹ COMSYS 2003 VSAT Report

² For an in-depth white paper discussion concerning comparative approaches broadband satellite refer to http://www.mwc.cc/PTC2002_broadband-economics.PDF



John Puetz is president of Master Works Communications (www.mwc.cc), a business and technical consulting services firm specializing in satellite communications. He can be reached at john@mwc.cc




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ICT Rebounding

by Martin Jarrold
 Chief, International Programme Development
 GVF

“Information and Communication Technology (ICT) is on the rebound,” so opens the introductory text to the brochure for the 2005 Pacific Telecommunications Council Conference (PTC 05) ‘Broadband and Content: From Wires to Wireless.’ Indeed, from the greatest cities to the smallest villages, access to Information and Communications Technologies and the development of the knowledge society through low cost telecommunications connectivity is an absolute imperative for the continued economic and social development of the nations of the land and ocean masses of Asia and the Pacific.

The governments of the region continue to plan the implementation of their respective visions of the ICT future, making assessments of an entire range of different technologies that they understand can help them to overcome the challenges of the *digital divide* and meet their declared public policy objectives, and all extensively premised on the exploitation of the capacity of the Internet to offer applications that deliver education, healthcare, government, and e-commerce. And within this technology mix you are sure to find ... **satellite**.

Satellite-based communications solutions – together with satellite-terrestrial hybrids that bring together satellite technologies with the technologies of GSM, WiFi, WLL, etc. – provide the only effective breakthrough from the bottleneck that is the under development of telecommunications services throughout much of the Asia-Pacific. Indeed, upcoming new services from operators/

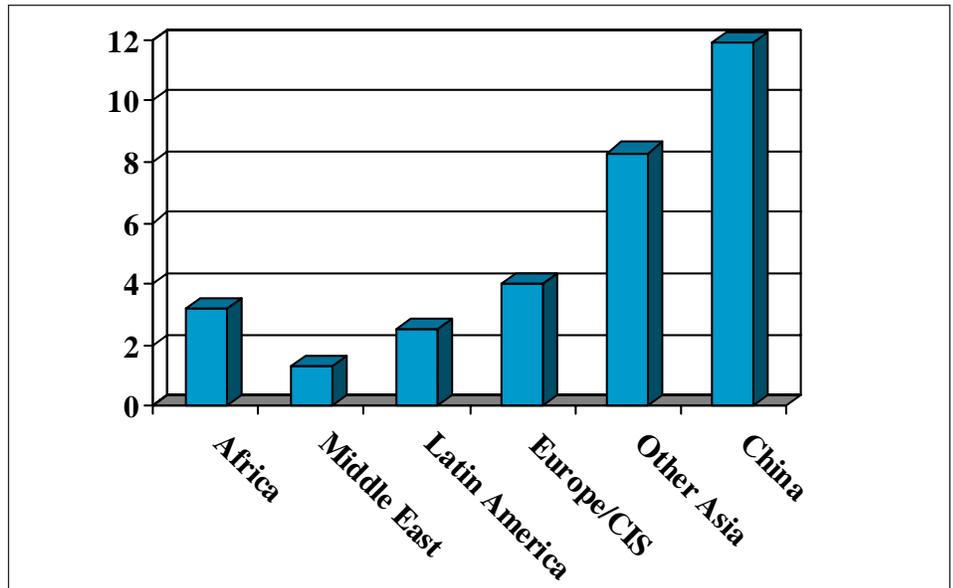


Figure 1: GVF Asia-Pac Satcoms Forum – ‘Best Practice’ Strategies (1) Rural Telephony Potential – The Annual Market in billions of US\$/Year (ITU 2003)



service providers based in the region itself are testament of the extent to which Asia’s ICT rebound is steering the region into leadership position in new satellite technology development.

Recognizing this developmental imperative and the new service offerings on the geostationary orbit horizon, the GVF has organized an *Asia-Pac Satcoms Forum* to address key issues regarding the world of connectivity solutions from

both satellite-based and satellite-terrestrial hybrid technologies. This event will take place on Sunday 16 January 2005, the first day of PTC 05 in Honolulu, USA (www.ptc.org).

The *Forum* proceedings will include examples of ‘best practice’ in the creation of strategies for satellite and satellite-hybrid solution deployment, network rollout and sustainable application development from key industry players. The explanation and elaboration of these strategies will be set against the backdrop of the role of various other telecommunications development stakeholders in contributing to the realization of the aims

MARKET INTELLIGENCE

and objectives of the UN Millennium Development Goals (MDG) and the ITU World Summit on the Information Society (WSIS) Action Plan, with a particular focus on the development of progressive policy and regulation by both individual national administrations and their regional associations. (Full details of the program for the *Forum* are shown here, *Figure 2*.)

Not surprisingly, a major driver behind the development and deployment of satellite and satellite-hybrid connectivity solutions remains the burgeoning demand of the rural voice market in the emerging economies of the Asia-Pacific (and in other regions), where the population lacks even plain old telephone service (POTS), and where deployment of copper/twisted-pair-based technology is as impractical and uneconomic as ever. *Figure 1* provides graphic illustration of an ITU study of 2003 which examined the size of the annual market for rural telephony services, concluding that the Chinese market alone would amount to some US\$12 billion worth of demand and that the rest of Asia would attain a level of demand in excess of US\$8 billion.

For more data and analysis of the future of the satcoms market within the region's broader connectivity and telecoms agenda, tune-in to the *GVF Asia-Pac Satcoms Forum*. **SM**



Martin Jarrold is the Director, International Programs of the Global VSAT Forum. He can be reached at martin.jarrold@gvf.org For more information on the GVF go to www.gvf.org

Figure 2:

GVF ASIA-PACIFIC SATCOMS FORUM

P r o g r a m

0830 – Registration

0900 – Welcome and Introduction from the Forum Chair

- **Bruce Elbert** – *President, Application Technology Strategy Inc*

0930 – Panel Debate – Formulating a telecommunications sustainable development agenda: the Millennium Development Goals, and the World Summit on the Information Society (WSIS)

- **Anil Prakash** – *Secretary General, ITU-APT Foundation of India*
- **World Bank** – *Speaker to be confirmed*

1015 – Refreshment Break

1030 – ‘Best Practice’ Strategies Forum (1) – Developing Information & Communications Technology (ICT) access via satellite, and via satellite-terrestrial hybrid technologies: Exactly how do Asia-Pac service providers build profitable businesses out of village rural telephony and voice over IP to the pan-Continental corporate network?

- **Giora Reish** – *Associate Vice President Asia, Gilat Satellite Networks*
- **Dave Rehbehn** – *Senior Director of Marketing (International Division), Hughes Network Systems*
- **ViaSat** – *Speaker to be confirmed*

1130 – Question & Answer Session

1145 – New Markets in Motion: Competition, Liberalization and the new Regulatory schema. Perspectives of the policy and regulatory communities

- **Bruce Olcott** – *Attorney, Squire, Sanders & Dempsey*

1215 – Lunch

1330 – ‘Best Practice’ Strategies Forum (2) – How will the capabilities and benefits of new satellite systems for fixed, nomadic and mobile broadband satellite services impact on the development sustainability of new ICT applications and networks across the North and South of the Americas and extending across the land-ocean mass of Asia-Pacific?

- **Patompob Nile Suwansiri** – *Head of Marketing, Shin Satellite*
- **Inmarsat** – *Speaker to be confirmed*
- **Stefan Jucken** – *Director of Sales Americas, ND Satcom*
- **Telecom Fiji** – *Speaker to be confirmed*
- **David Ball** – *Vice President Asia-Pacific, PanAmSat*

1515 – Question & Answer Session

1530 – Concluding Remarks from the Forum Chair

- **Bruce Elbert** – *President, Application Technology Strategy Inc*

STOCK MONITOR

Company Name	Symbol	Price (Jan. 3)	52-Week Range
APT SATELLITE	ATS	1.54	1.32 - 3.50
ANDREW CORP	ANDW	13.25	9.30 - 21.67
ASIA SATELLITE TELECOM	SAT	18.80	15.20 - 22.80
BALL CP	BLL	43.79	28.255 - 45.20
BOEING CO	BA	50.60	38.04 - 55.48
BRITISH SKY ADS	BSY	41.57	33.22 - 59.24
CALAMP CORP	CAMP	8.641	5.12 - 17.20
C-COM SATELLITE SYSTEMS	CMLV	0.48	0.34 - 0.60
COM DEV INTL LTD	CDV.TO	3.10	2.15 - 3.80
COMTECH TELECOM	CMTL	35.2605	14.93 - 39.52
THE DIRECTTV GROUP	DTV	16.23	14.70 - 18.81
ECHOSTAR COMMUN A	DISH	32.56	26.95 - 40.10
FREQUENCY ELECTRONICS	FEI	15.00	10.22 - 17.13
GILAT SATELLITE NETWORKS	GILTF	5.88	3.95 - 9.86
GLOBECOMM SYS INC	GCOM	6.63	4.38 - 7.58
HARRIS CORP	HRS	57.95	37.90 - 69.15
HONEYWELL INTL IN	HON	34.84	31.23 - 38.46
INTEGRAL SYSTEMS	ISYS	19.146	15.35 - 22.12
K V H INDS INC	KVHI	11.10	6.61 - 25.87
L-3 COMM HLDGS IN	LLL	68.47	49.31 - 77.26
LOCKHEED MARTIN	LMT	52.61	43.10 - 61.77
NEWS CORP	NWS	18.99	15.305 - 19.87
NORSAT INTL INC	NSATF.OB	0.54	0.45 - 0.95
NTL INC	NTLI	70.68	46.65 - 73.81
ORBITAL SCIENCES	ORB	10.90	9.67 - 14.19
QUALCOMM INC	QCOM	42.61	26.71 - 44.99
RADYNE COMSTREAM	RADN	7.59	6.26 - 13.426
SCIENTIFIC ATLANTA	SFA	31.52	24.61 - 38.59
SIRIUS SATELLITE	SIRI	7.60	2.01 - 9.43
SES GLOBAL	SDSFa.F	9.54	6.30 - 9.50
TRIMBLE NAVIGATION	TRMB	32.21	20.15 - 34.45
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