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March 2007

Worldwide Satellite Magazine

Vol. 4 No. 11



Satellite Services

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NOTE FROM THE EDITOR

Are They Sirius?

The big news at the recently-concluded SAT 2007 show in Washington, D.C. was the proposed merger of US satellite radio giants XM and Sirius Satellite. Unlike other big announcements of late, this one was met with a lot of skepticism. The consensus seems to be that it has no chance of clearing regulatory hurdles, given that their respective licenses comes with the provision that

they are not to take over the only two US satellite radio licenses issued by the FCC. Yet XM and Sirius, which have both not posted a profit from their operations despite signing up more than 14 subscribers in record time, persisted in their merger plans even as it looks doomed from the very beginning. The merger is probably inevitable, with a finite number of potential subscribers out there and due to intense competition from each other on radio talents such as Howard Stern's reported \$500 million contract with Sirius that has certainly impacted on their bottom line.

But if the recent FCC decisions on similar mergers such as the DirecTV and Echostar Direct Broadcasting Service (DBS) venture is any indicator, regulatory authorities in the US frown upon such monopolies. But XM and Sirius are arguing that they are really not so much as competing against each other but against the hundreds of millions of units of terrestrial radio, PCs, PDAs and other wireless devices such as iPods which all are capable of receiving audio programs. They may have a point there. Its not going to be easy to convince the FCC, but it will certainly be very interesting to see how this pans out.

Meanwhile, with the success of SatMagazine, which we are now going on our fourth year, we will start a new quarterly publication at the end of the month focusing on the growing military satellite market. Milsatmagazine.com will be the first and only publication focusing on the military satellite market. Watch out for it.

Virgil Labrador

Article Contributions to SatMagazine

Satmagazine accepts article contributions from the industry. We encourage contributions that deal with issues affecting the industry as opposed to company or product-specific articles. We are specifically interested in case studies, opinion (op-ed) pieces, features or market studies and trends. To submit proposals for possible articles, send a one-paragraph or less abstract of the proposed article or to obtain more information on our editorial calendar, publishing guidelines and deadlines, please send an e-mail to virgil@satnews.com

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Calendar of Events 2007

MARCH

Mar. 5-6, London, UK
The Connected Home

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 E-mail: deea@junction-group.com
 Web: www.the-connected-home.co.uk

Mar. 5-7, London, UK
IPTV World Forum

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 E-mail: ian@junction-group.com
 Web: www.iptv-forum.com

Mar. 5-8, George Washington University
 Washington, D.C., USA
Planetary Defense Conference
 Tel.: 310.336.5000 / Fax: 310.336.7055
 Web: <http://www.aero.org/>

Mar. 6-8, Dubai, UAE
CABSAT 2007
 Web: www.cabsat.com

Mar. 7, London, UK
TV over Net
 Ingrid Anusic
 Tel: +44 1173 116 220 / Fax: +44 1173 116 221
 E-mail: ingrida@junction-group.com
 Web: www.tvover-net.com

Mar. 7-8, Brussels, Belgium
MilSpace 2007: Planning, Funding & Strategies
 Teri Arri
 Tel: +44 (0) 20 7827 6162
 E-mail: tarri@smi-online.co.uk
 Web: <http://www.smi-online.co.uk/events/overview.asp?is=1&ref=2539>

Mar. 12-16, Johannesburg, South Africa
SatCom Africa 2007
 Brian Shabangu
 Tel: +27 11 463 6001 / Fax: +27 11 463 6903
 Email: brian.shabangu@terrapinn.co.za
 Web: www.satcomafrika.com

Mar. 20, Chantilly, VA, USA
Aviation Week Laureate Awards
 Lydia Janow, CMP
 Tel.: 800-240-7645 or 212-904-3225
 Fax: 212-904-3334
 E-mail: janow@aviationweek.com
 Web: www.aviationweek.com/conferences/

Mar. 21-23, Nanyang Technological University, Singapore
3rd Asian Space Conference
 Timo Rolf Bretschneider
 Phone: +65 – 6790 6045 / Fax: +65 – 6792 6559
 E-mail: astimo@ntu.edu.sg
 Web: <http://pdcc.ntu.edu.sg/ASC2007>

Mar. 20-22, Washington D.C., USA
California Space Week
 Timo Rolf Bretschneider
 Phone: +65 – 6790 6045 / Fax: +65 – 6792 6559
 E-mail: astimo@ntu.edu.sg
 Web: <http://pdcc.ntu.edu.sg/ASC2007>

APRIL

April 10-13, Coex, Seoul, Korea
25th AIAA International Communications Satellite Systems Conference (ICSSC-2007)
“Evolution Toward a Ubiquitous Network Society”
 Anna Kim
 APSCC secretariat
 Tel: +82 2 508 4883~5 / Fax: +82 2 568 8593
 E-mail: info@apsc.or.kr
 Web: <http://www.icssc2007.com>

April 11-13, Istanbul, Turkey
Caspian Telecoms 2007
 Elena Peredel'skaya
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 Fax : + 44 (0) 20 7596 5208
 E-mail : Elena.Peredelskaia@ite-exhibitions.com
 Web: www.caspiantelecoms.com/

April 14-19, Las Vegas, NV, USA
NAB 2007
 Tel: (202) 429-5300 / Fax: 202 429 4199
 Email: nab@nab.org / Web: <http://www.nab.org/>

FEATURED EVENT

ISCe 2007 Conference to Focus on Satellite and Hybrid Network Solutions



ISCe Conference and Expo 2007

June 5-7, 2007, San Diego Hilton Resort at Mission Bay, California

The ISCe 2007 Conference Program has been streamlined by organizers to better focus on key markets addressed by the satellite industry. "This year ISCe's 'gone vertical.' said ISCe Chairman David Bross. "I have streamlined the program into three full days (rather than 3-1/2 days) and focused each day on a particular vertical market. I also have trimmed the exhibition to two days and focused much more time in the program on exhibit-only opportunities," he added.

Now in its sixth year, Hannover Fairs, USA will be holding the 6th Annual ISCe Conference and Expo from June 5-7 at the same venue last year, the San Diego Hilton Resort in San Diego, California.

On Day One (June 5) the World Teleport Association (WTA) and Global VSAT Forum (GVF) are coming together to produce, a day-long track of sessions titled: 'Profiting from Hybrid Solutions: How Satellite

Users and Service Providers Integrate Satellite Into Fixed, Mobile and Wireless Communications.' These sessions will provide the attendee with a high-level exploration of opportunities, discuss technical challenges and how they are overcome and offer case studies of field-proven applications in Satcoms.

On Day Two (June 6) ISCe is, again, presenting—in conjunction with The Carmel Group—the 12th Annual Five Burning Questions Seminar along with the Cable, Satellite & Telco Entertainment Forum. This day is designed specifically for those companies that do business in the profitable worlds of consumer services, SME and SoHo markets and in broadband communications of all types. "All of the content on this day will be exclusive to this marketplace segment, hence the vertical nature of the program, and will feature many more general sessions," said Bross.

Finally, on Day Three (June 7) ISCe will present its annual Military & Government Requirements Forum. This is the largest one-day forum on the West Coast dedicated solely to the

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interplay between the commercial communications satellite industry and the military. As with the program on Day Two, this day is organized for those companies that do business with the Defense Department, U.S. and foreign governments and the First Responder Community. "The day will feature keynotes with from top military leaders, exclusive general sessions and a streamlined program which promises direct access to the movers and shakers in this field. This is an ISCe signature program," said Bross.

"Whether you are an executive from the satellite industry, cable TV business, a content provider, equipment manufacturer, end user of services or a competitor (cable TV or telco

executive), ISCe 2007 is the meeting place to gain the competitive intelligence on where the converged, hybrid telecoms marketplace is headed in a relaxed atmosphere filled with

networking opportunities, a world-class exhibition and a must-attend program. There is no other event like this in the United States," added Art Paredes, Chairman of ISCe organizer, Hannover Fairs, USA.

"ISCe is an intimate, vertically-integrated show that provides senior executives access to the highest-level executives in the marketplace along with unequaled social and networking opportunities via the conference program, bustling exhibition, SSPI Beach Blast (now in its second year) and the signature ISCe Awards Dinner Program and International Reception," concluded Bross.

For more information on ISCe 2006 Conference and Expo contact the Conference Chairman, David Bross at +1-301-916-2236 or e-mail at: dbross@hfusa.com or go to www.isce.com **SM**

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INDUSTRY NEWS

Sirius/XM Merger: FCC Roadblock Ahead?

WASHINGTON D.C. — For Sirius Satellite Radio and XM Satellite Radio, which announced a \$13 billion merger amid investor concern and analyst's skepticism, job number one is convincing the Federal Communications Commission (FCC) the deal isn't the "M" word in disguise.

The merger of the only two players in the decades old subscription satellite music industry has given rise to an entity—as yet without a company name—with a combined market capitalization of over \$6 billion and 14 million subscribers between them. The deal will create a nationwide audio entertainment provider with combined 2006 revenues of \$1.5 billion. Neither company has returned a profit from its operations, however.

The companies said they had entered into a definitive agreement to combine their radio operations in a tax-free, all-stock merger of equals with a combined enterprise value of \$13 billion. Under the deal's terms, XM shareholders will receive a fixed exchange ratio of 4.6 shares of Sirius common stock for each share of XM they own. Sirius and XM shareholders will each own 50 percent of the new company.

The new entity, which will be headed by Sirius chief executive officer Mel Karmazin and XM chairman Gary Parsons in their old positions, will command seven in-orbit satellites, of which five remain active. The newest in this combined fleet, XM-4, was last week sold to a trust by XM for \$289 million to pay off mortgages and restore liquidity.

The partners will have a tough time convincing the FCC they haven't created a monopoly, according to some analysts. The FCC must first approve the merger and that's a big if since both XM and Sirius are the entire satellite radio market.

FCC rules clearly state that one satellite radio provider cannot buy the other one. That rule could be waived, however. A merger would also have to win antitrust approval from the Department of Justice.

"Obviously the Commission will evaluate any transaction filed to make a determination whether or not approval would be in the public interest," said FCC chairman Kevin Martin in a statement. "The hurdle here, however, would be high as the Commission originally prohibited one company from holding the only two satellite radio licenses."

"The companies would need to demonstrate that consumers would clearly be better off with both more choice and affordable prices," Martin said. "The hurdle here, however, would be high as the Commission originally prohibited one company from holding the only two satellite radio licenses. The companies would need to demonstrate that consumers would clearly be better off with both more choice and affordable prices."

Last January in Washington, Martin said the two satellite radio companies would not be allowed to merge under current regulatory rules.

SES Restructures; GE Exits

BETZDORF, Luxembourg — SES said it will re-acquire the 19.5 percent stake held by General Electric Co. for \$1.63 billion (EUR 1.24 billion) in assets and cash in a restructuring bid to boost earnings per share and optimize assets.

Under the agreement, SES will contribute certain assets and cash to a new company called SES International Holdings, Inc. (SIH) and exchange shares of this company for GE's entire holding of 103,149,900 shares in SES, subject to satisfaction of certain closing conditions.

GE will exchange its shareholding in SES for shares in SIH, comprising assets and \$722 million in cash, subject to certain closing adjustments. The assets of SIH will include the AMC-23 satellite and its related business; 100 percent of Satlynx; 49.5 percent of Bowenvale (representing a 34.1 percent interest in AsiaSat); 19.99 percent of Star One and 5.5 percent of Orbcomm. SES has agreed to pay an equivalent of \$15 (EUR 12) for each exchanged share, resulting in a total transaction value of \$1.63 billion. The cash amount and the transaction value may be increased by some \$59 million depending on the closing date. The transaction is expected to close by the second quarter of this year.

Romain Bausch, President and CEO of SES, said GE's exit will allow SES to meet two business objectives: restructuring and optimizing its portfolio of assets following the New Skies acquisition and removing the GE share overhang.

"The transaction will significantly boost earnings per share in 2007 and beyond, as well as taking the free float up to close to 70 percent. Using a combination of assets and cash as consideration will allow the company to leverage its balance sheet while maintaining its investment grade credit rating. We are convinced that this transaction will both deliver significant

INDUSTRY NEWS

additional value to the SES shareholders and strengthen the group's capability to roll out its business strategy more efficiently in Asia and Latin America."

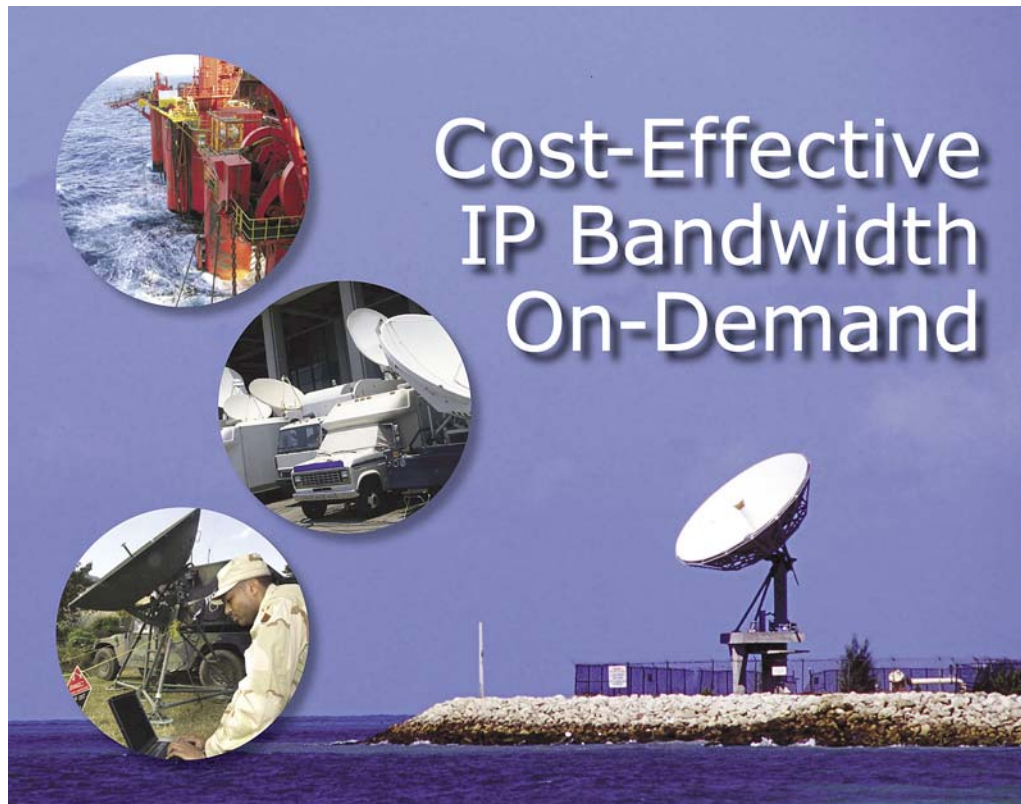
The acquisition of SES New Skies in March 2006 added to the SES fleet five 100 percent owned satellites over Asia, Africa and Latin America (NSS-806, NSS-7, NSS-703, NSS-6 and NSS-5). These satellites are in addition to the spacecraft already owned through participations in AsiaSat and Star One, as well as the three other 100% owned assets (AMC-12/ASTRA 4A, AMC-23 and AAP-1), which have comparable coverage and serve similar business purposes to some of the New Skies satellites.

This created an opportunity to restructure and optimise SES' business assets and portfolio of minority participations which led to the decision to divest from the shareholdings in AsiaSat and in Star One, as well as to dispose of the AMC-23 satellite operated over the Pacific Ocean Region.

With SES New Skies generating most of its revenues in the government and enterprise infrastructure segment, SES has also re-evaluated the relevance of certain of its satellite end-to-end managed service activities in the enterprise market. As a result, SES decided to divest from Satlynx, the group's end-to-end managed service entity. There will now be an increased focus of the SES service business on media and government applications.

Boeing Hit by Lawsuits Over Failed Satellites

WASHINGTON — Telesat Canada and Japanese firm Space Communications Corporation are suing the Boeing Company for a combined \$610 million in damages related to alleged malfunctions in the BSS-702 model satellite made by Boeing's Satellite International, Inc. and a failed orbital insertion. Boeing said the



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INDUSTRY NEWS



The Boeing 702 model spacecraft, called NSS-8, was declared a loss when the Sea Launch Zenit-3SL vehicle carrying the satellite experienced an anomaly during the launch on January 30, 2007. (Boeing photo)

million related to a bungled 2004 launch of Japan's Superbird-6 satellite. Space Communications' insurers filed an arbitration request on Dec. 1. Superbird-6 was allegedly damaged in low orbit after the 2004 launch.

Several early model 702 satellites such as Anik F1 allegedly failed after having problems with their solar panel cells. Industry sources said six Boeing 702 models have failed in orbit due to long-term power loss from a degradation of their solar concentrators: Anik F1, Galaxy 11, PAS 1R, Thuraya 1, XM 1 and XM 2.

They said Anik F1 suffered from a generic failure of the early BSS-702 model: fogging of the concentrator mirrors on the solar arrays that led to reduced available power.

The first version of the 702 used solar arrays with concentrators. These concentrators tended to early fogging, leading to reduced operating lifetimes. The outgassing of the solar cells was higher than expected due to an inherent design flaw. The flaw was corrected in later versions with higher power triple-junction gallium arsenide solar cells.

Anik F1 was launched on November 21, 2000 by an Ariane 44

claims in both lawsuits were without merit.

Telesat Canada, the satellite unit of Canadian telecommunications company, BCE Inc., and its insurers are suing Boeing for \$385 million in damages and \$10 million in lost profits for the failure of its Anik F1 satellite, a Boeing 702 model. Telesat Canada filed an arbitration order against Boeing in November 2006 and an action in a Canadian superior court in December 2006.

On the other hand, Space Communications Corporation's insurers are suing Boeing's satellite unit for \$215

million from the European Space Agency space center at Kourou, Guiana. The primary customers are the Canadian Broadcasting Corporation, Star Choice, Chum Limited and Canadian Satellite Communications, Inc. Anik F1 will be replaced by Anik F1R.

Teal Group Says Satellite Market on Growth Curve

RESTON, Virginia — The Teal Group believes the commercial satellite industry is on the verge of growth cycle that might extend until well into the next decade.

"Last year marked the second consecutive year of growth in the number of commercial communications satellites launched to geostationary orbit," says Marco Caceres, Teal Group senior space analyst. "This hasn't happened in at least the past 20 years, and it may signal the start of an up cycle for the overall market."



Teal estimates more than 200 commercial satellites manufactured through 2016. (SS/L photo)

Teal also estimates orders for more than 200 geostationary commercial communications satellites worth more than \$25 billion through 2016. Orders for more than 100 low earth orbit mobile communications replacement satellites are expected to be generate up to \$4 billion in business. Next-generation U.S. military satellite programs are estimated at a total cost of \$100 billion.

Teal Group is a defense and aerospace market analysis firm based in Fairfax, Virginia, USA. It provides competitive intelligence to industry and government worldwide.

Teal will present future trends in the markets for satellites, civil and military aircraft, aero turbine engines, UAVs and defense electronics at the Aerospace Markets forum presented by the American Institute of Aeronautics and Astronautics (AIAA) on

INDUSTRY NEWS

March 6 in Washington, D.C.

Investigation Begins into Sea Launch Rocket Explosion

LONG BEACH, Calif. — The Odyssey Launch Platform returned to its homeport here to begin repair work and a start to the investigation as to the causes behind the destruction of the \$300 million NSS-8 satellite at lift off last January 30.

The Odyssey and its sister ship, Sea Launch Commander, are moored together following their return. In a statement Sea Launch said plans for repairs on the vessel are moving forward as is the investigation into the unsuccessful launch.

The company said initial steps to identify the cause of the failure were being taken and its international partners were planning an independent investigation. The partners' findings will be reviewed by an oversight board led by Kirk Pysher, vice president and chief systems engineer for Sea Launch.

The cause of the destruction of the Zenit-3SL rocket might have been a LOX feedline rupture and valve failure leading to a LOX tank pressurization failure. The rocket's RD-171 engine has been cleared of causing the failure.

The blast destroyed both the

three-stage rocket and the Boeing-built NSS-8 owned by SES New Skies. A flame deflector below the launch pad was lost and doors to the platform's hangar were unhinged. **SM**

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Quad-Band Frequency Converters and
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EXECUTIVE MOVES

Northrop Grumman Elects Wesley G. Bush President and Chief Operating Officer



Wesley G. Bush



James F. Palmer

LOS ANGELES — Northrop Grumman Corporation has elected Wesley G. Bush chief operating officer of Northrop Grumman in addition to his

current title of president.

The board of directors also elected James F. Palmer corporate vice president and chief financial officer, succeeding Bush as CFO. Both elections are effective March 12, 2007. Bush and Palmer will report to Ronald D. Sugar, chairman of the board and chief executive officer. This completes the search for a chief financial officer that the company announced in May 2006. In his new role as chief operating officer, Bush will continue to work closely with Sugar, focusing on company operations. Sugar said Bush had done an outstanding job as president and chief financial officer, and that the company can leverage Bush's extensive operational talent and experience more broadly.

Bush, 45, joined Northrop Grumman in 2002 as part of the company's acquisition of TRW Inc. He joined TRW in 1987, where he held increasingly responsible technical and management positions in electronic and space systems. In 2001, he was elected president of TRW Aeronautical Systems in Birmingham, United Kingdom.

Following Northrop Grumman's acquisition of TRW, Bush was elected corporate vice president and president of the company's Space Technology sector. In 2005, he was elected corporate vice president and chief financial officer and in 2006, was elected president and chief financial officer.

Bush earned Bachelor of Science and Master of Science degrees in electrical engineering from the Massachusetts Institute of Technology.

As chief financial officer, Palmer will be responsible for the

company's overall business management function and activities including the controller; treasury; contracts, pricing and supply chain; financial planning; tax; internal audit; investor relations; trust administration and investments; and financial process excellence functions. He will also provide leadership to the business management organizations within the operating sectors of the company.

Palmer joined Northrop Grumman from Visteon Corporation where he currently serves as executive vice president and chief financial officer. He joined Visteon in June 2004. He previously served from 2000 to 2004 as president of Boeing Capital Corporation, and from 1997 to 2000 as president of Boeing Shared Services.

From 1995 through 1997 he was senior vice president and chief financial officer of the McDonnell Douglas Corporation. At McDonnell Douglas, he also served as vice president and treasurer as well as vice president of business operations and CFO for military aircraft and missiles. Prior to his work at McDonnell Douglas, Palmer worked for twenty years at Ernst & Young, rising to the position of partner.

Northrop Grumman Corporation is a \$30 billion global defense and technology company whose 120,000 employees provide innovative systems, products, and solutions in information and services, electronics, aerospace and shipbuilding to government and commercial customers worldwide.

Intelsat Names Shernit to Head Intelsat General Unit

WASHINGTON — Intelsat has appointed William Shernit as the new president of its subsidiary Intelsat General. Intelsat General provides innovative communications solutions primarily to military and civilian government customers.

Shernit served 13 years at the Central Intelligence Agency, where he was responsible for a broad range of technical systems and advanced technologies. He then moved to private industry and joined BAE Systems, Inc. in 1989. He rose to become President of BAE Systems' Information Technology group.

At BAE Systems, Shernit was responsible for successfully implementing strategic and operational plans for the IT group, as well as expanding the department through organic growth and acquisitions, and he helped to grow the BAE Systems IT group to a \$1 billion enterprise. His group focused particularly

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on network-centric infrastructures and information-sharing among the intelligence community, homeland security agencies, and the warfighter.

Shernit holds Master of Science and Bachelor of Science degrees in Electrical Engineering from Cornell University in New York.

L-3 Names Curtis Brunson Senior VP – Corporate Strategy and Dev't; Susan D. Opp is Corporate VP and President of Communication-Systems West

NEW YORK — L-3 Communications has named Curtis Brunson senior vice president – Corporate Strategy and Development for the company. In this new position, Brunson will be responsible for L-3's corporate growth initiatives, including customer relationships, technical development and business development.

Brunson will report to Michael T. Strianese, President and Chief Executive Officer of L-3.

Brunson began his career in 1972 with Sperry Systems Management Division, prior to its merger into Unisys Government Services. At Unisys for over 20 years, he held several management positions of increasing responsibility. When Loral acquired Unisys Communication Systems in Salt Lake City, he was division president. That division became part of L-3 Communications during its formation in 1997 with Brunson becoming president at that time.

Brunson holds a Bachelor of Science Degree in Computer Science from the New York Institute of Technology and a Masters of Science Degree in Computer Science from Polytechnic Institute in Brooklyn, New York.

L-3 has also named Susan D. Opp a corporate vice president and president of its Communication Systems-West (CS-West), division. Opp assumes the role previously held by Curtis Brunson.

In 1986, Opp began her career as an associate engineer with Sperry Univac and has held positions of increasing responsibility in engineering, product and business development, and program management at L-3's CS-West division. Her most recent position was as vice president of Strategic Development.

She graduated with a Bachelor of Science Electrical Engineering from South Dakota School of Mines & Technology and has a Master's Degree in Business Administration from the University of Utah.

Integral to De-Classify the Board of Directors

LANHAM, Md. — Integral Systems, Inc. announced on Feb 6, it will de-classify its board so that it will just consist of a single class of directors in which all directors will stand for election every year.

Integral said the decision is a the result of an agreement made after consultations with various company stockholders.

The company also announced that it intends to add Mickey Harley, as a representative of Fursa Alternative Strategies LLC, the largest stockholder of the company, to its board of directors at the next regular board meeting today.

"I believe that the company's decision to de-classify the board of directors at this time is in the best interests of the Company and its stockholders," stated Pete Gaffney, CEO of the company. "These actions demonstrate the Company's commitment to strong, stockholder- focused, contemporary corporate governance practices which I believe are consistent with the company's goal of maximizing stockholder value," he said. Since the annual stockholder meeting in April, 2006, the board has been reconfigured to address stockholder requests. Messrs Harley, Leimkuhler, Baldwin (all stockholder recommendations), Albertine, and Casner have been added providing greater depth and independence to the previously elected board. The resulting board composition is well constituted to evaluate and guide the company in directions to maximize stockholder value according to Gaffney.

With the company's decision to de-classify the board, Fursa Alternative Strategies LLC and Chartwell Capital Investors II, L.P., another large stockholder of Integral, has agreed not to initiate or pursue a change in the board before 2008.

Gen. Howell M. Estes III Appointed to DigitalGlobe Board of Directors

LONGMONT, Colo. — DigitalGlobe announced on Jan.29, that Gen. Howell M. Estes III has been appointed to its board of directors, effective immediately. Gen. Estes will serve as a

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strategic guide in the defense and intelligence markets for the company as it continues its business development and growth strategy.

Jill Smith, chief executive officer of DigitalGlobe, said Gen. Estes has an extraordinary reputation in the aerospace and remote sensing industry. "His business acumen and intellect, as well as his extensive military and policy experience will strongly contribute to our aggressive growth trajectory going forward," she said.

Gen. Estes retired from the United States Air Force in 1998 after more than 30 years of service. He most recently served as commander-in-chief of the North American Aerospace Defense Command (CINCNOAD) and the United States Space Command (CINCSpace), and commander of the Air Force Space Command (COMAFSPC).

He holds a Bachelor of Science degree from the Air Force Academy, a Master of Arts degree in public administration from Auburn University and is a graduate of the program for senior managers in government at Harvard's JFK School of Government.

Gen. Estes currently serves as president of Howell Estes & Associates, Inc., a consulting firm to CEOs, presidents and general managers of aerospace and telecommunications companies. He is currently chairman of the board of directors of the Federal Employee Support for CFC Charitable Giving, vice chairman of the board of trustees at The Aerospace Corporation, and president of the board of trustees of the Colorado Springs School.

Motient Appoints William Freeman to Board of Directors

RESTON, Va. — Motient Corporation (MNCP) has announced that William Freeman has been appointed to Motient's board of directors.

Freeman is chairman of TerreStar Networks Inc., a majority-owned subsidiary of Motient. He has previously served as the CEO of Leap Wireless International, Inc. From 1994 to 2004, Freeman was a senior executive at Verizon. He served as president - Public Communications Group from 2000 to 2004. From 1994 to 2000, Freeman was president and CEO of Bell Atlantic-New Jersey and served as president and CEO of Bell Atlantic-Washington D.C.

Freeman currently is a member of the board of directors of the CIT Group, Inc., a publicly traded company, and Value Added Communications, Inc., a privately held company. He is vice chairman of the board of trustees of Drew University and a member of the board and a past chairman of the board of Junior Achievement Worldwide.

TerreStar Names William Freeman New Chairman

RESTON, Va. — TerreStar Networks Inc. has announced that William Freeman was elected and will serve as its chairman of the board. Freeman has served as a director on TerreStar's board since May 2005.

"Bill brings years of telecommunications and operations experience that will help lead TerreStar as we mature from a development-phase company to one focused on execution and operations," said Robert H. Brumley, president and CEO of Motient Corporation and its subsidiary TerreStar Networks Inc. "This is a natural evolution for us both and I'm pleased he will assume a greater leadership role as we bring into reality the nation's first integrated satellite/terrestrial communications network."

Freeman has served as a director of TerreStar's board since May 2005, and served as chairman of its audit committee and compensation committees. From 2004 to 2005, he was the CEO of Leap Wireless International, Inc. From 1994 to 2004, Freeman was a senior executive at Verizon. He served as president - Public Communications Group from 2000 to 2004. From 1998 to 2000, Freeman was president and CEO of Bell Atlantic-New Jersey and from 1994 to 1998 he served as president and CEO of Bell Atlantic-Washington D.C.

Freeman currently is a member of the board of directors of the CIT Group, Inc., a publicly traded company, and Value Added Communications, Inc., a privately held company. He is vice chairman of the board of trustees of Drew University and a member of the board and a past chairman of the board of Junior Achievement Worldwide.

Todd A. Stottlemeyer Appointed to DataPath's Board of Directors

DULUTH, Ga. — DataPath, Inc., a provider of satellite and wireless communications networks, has announced the appointment of Todd A. Stottlemeyer to its board of directors.

EXECUTIVE MOVES

Stottlemeyer, currently president and chief executive officer of the National Federation of Independent Business (NFIB), America's largest small-business advocacy group, also serves as vice chairman of the board for the National Capital Region American Red Cross (Washington, D.C.) and as a board member of the INOVA Health System Foundation.

"Todd is a valuable addition to our expanded board," said Wilson Lowery, DataPath's chairman of the board. "His technology background and extensive contact network can greatly support DataPath in achieving its 2007 objectives and implementing its growth strategy."

Stottlemeyer previously served as CEO of Apogen Technologies, a Northern Virginia-based information technology services and solutions company. Prior to joining Apogen, he served as president of McGuireWoods Consulting, managing director of McGuireWoods Capital Group and chief financial officer of BTG Inc., a publicly traded company. He also held senior management positions at BDM International.

Stottlemeyer graduated with a Bachelor of Arts degree from the College of William and Mary and received a Juris Doctor degree from Georgetown University Law Center.

ProtoStar Appoints Paul Froelich CFO

SAN FRANCISCO, Calif. — ProtoStar Ltd., a Bermuda corporation with principal U.S. operations in San Francisco, has appointed Paul Froelich as its chief financial officer.

Froelich previously served as the chief financial officer of WildBlue Communications, a satellite-based broadband Internet service provider. Prior to WildBlue, he was involved in infrastructure finance in Asia for an affiliate of Bechtel Enterprises. His appointment follows ProtoStar's recent successful funding rounds, which total over \$250 million to date. The company's initial plan is to create a three-satellite constellation serving the fast-growing and under-served Asian direct-to-home (DTH) satellite-TV market.

Froelich began his career with a New York-based private equity boutique, where his primary responsibilities included the structuring and financing of leveraged private-equity transactions. He holds an M.B.A. from the University of Pennsylvania's Wharton School, and a B.S. in petroleum engineering from the University of Southern California. ProtoStar expects to complete construction and launch its first satellite, ProtoStar I, in early 2008. ProtoStar I is an SS/L-

manufactured FS 1300, a satellite utilized by many of today's DTH operators.

Measat Appoints Terry Bleakley to Head Sales and Marketing

KUALA LUMPUR — Measat Satellite Systems Sdn. Bhd. has appointed Terry Bleakley to head Measat's global sales and marketing efforts. In this role, Terry oversees the Sales, Marketing and Customer Engineering Departments, coordinating efforts within the organization in building and supporting a strong customer base.

Prior to joining Measat, Terry held senior sales positions at Intelsat including, most recently, managing sales director (Asia Pacific). Prior to joining Intelsat, Terry worked for PanAmSat where he took the role of senior director of Sales (Greater China and North Asia). Terry has also held key sales and marketing management roles at QoS Networks, Concert and British Telecoms.

Terry holds a Bachelor of Science Degree and Post Graduate Diploma in Aviation.

Northrop Appoints Douglas J. Norton Sector Chief Information Officer

BALTIMORE — Northrop Grumman Corporation (NYSE:NOC) has named Douglas J. Norton chief information officer for the company's Electronic Systems sector.

In this position, Norton is responsible for establishing the strategic direction and leadership of all information systems and information technology activities in the Electronic Systems sector.

Norton joined Northrop Grumman in 1986 as a software engineer. Throughout his 20-year career with the company, he has held management and executive positions in engineering and information systems, including manager of process and tool development support, and director of sector processes and design automation in engineering and manufacturing.

Most recently, he served as director of operations for Electronic Systems within the company's Information Technology sector, ensuring synergy across the corporation and providing strategic focus in support of the sector's business initiatives. Norton earned a bachelor's degree in information systems from the University of Maryland Baltimore County.

EXECUTIVE MOVES

MSV Appoints Drew Caplan Chief Network Officer

RESTON, Va. — Mobile Satellite Ventures (MSV) has announced the appointment of Drew Caplan, a 25-year veteran of the telecommunications industry, to the position of chief network officer. Caplan will be responsible for MSV's network engineering and technology functions, as well as leading the development and deployment of MSV's next generation network.

"Drew brings to MSV an outstanding reputation for technical leadership and knowledge of the wireless market," said Alexander H. Good, vice chairman, and CEO of MSV.

Good said that during Drew's tenure at Nextel, he consistently demonstrated his ability to develop and operationalize a best-in-class network capable of providing innovative products and services. Prior to joining MSV, Caplan served as vice president of National Network Services at Nextel Communications from November 1996 to August 2005, where he developed and delivered Nextel's new services and handsets,

engineered and operated significant portions of the Nextel's nationwide network. **SM**



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NEW PRODUCTS

Globecomm Introduces SatCell Mobile Network Solution Via Satellite

NEW YORK — Globecomm has launched its “SatCell Managed Network Services” that provides carriers with an optimum mobile network for serving low-density markets, geographically isolated areas and sudden, limited-duration demand via satellite.

The company said SatCell is designed to generate revenues for carriers by giving them the ability to rapidly launch networks or extend existing ones while deferring capital costs for switches and fiber backhaul. SatCell can also be used to connect isolated “telecom islands,” expand coverage to meet short-term demands and supplement an existing network’s coverage to deploy new services or capabilities.

In 2003, Globecomm received a GSM Association award for the demand-assigned mesh network technology that has become SatCell.

Globecomm vice president Stephen Yablonski said this technology optimizes mobile signaling and backhaul traffic for satellite transmission as IP, using a hybrid architecture customized to a network’s traffic volumes and patterns. It enables the prioritization of traffic, a dynamic sharing of bandwidth among base stations, and deployment of higher-order modulation where needed. The result is a significant reduction in the bandwidth required to connect base stations.

“The cost of bandwidth is the single biggest factor in the recurring cost of carrying voice traffic by satellite,” said Yablonski.

Advantech Brings Low-Cost -SCPC System to Market

MONTREAL, Canada — Advantech Satellite Networks and Advantech Satellite Equipment have announced the availability of a new low cost DVB-SCPC system notable for its easy scalability.

Both companies are divisions of Advantech AMT, Inc., an industry leader in the design, manufacture and marketing of equipment for satellite and wireless communications. Advantech AMT has its headquarters in Montreal, and operates facilities in Europe and the United States.

The new system features the world’s first dual capability DVB-

SCPC and DVB-RCS terminal, the SatNet terminal model S5400. Advantech president Don Osborne said the DVB-SCPC VSAT system is the right solution to complement the company’s DVB-RCS hub and terminal product line.

“Customers sometimes require small VSAT system deployments and require the dedicated bandwidth connectivity offered by SCPC remote-to-hub return links,” said Osborne.

“We offer the world’s most affordable DVB-SCPC hub and terminal solution, which can easily be upgraded later to a full-featured DVB-RCS system as the customer’s network size expands over time.”

Vagan Shakhgildian, president of Advantech Satellite Equipment, said Advantech’s DVB and SCPC modem business is growing to offer complete system solutions that will benefit its customers. He noted that Advantech offers a complete suite of DVB, SCPC and DVB-RCS IP datacasting and networking solutions.

Homeland to Add Satellite Modem to Cyber Tracker Product

SAN FRANCISCO, Calif. — Homeland Integrated Security Systems, Inc., a maker of tracking and security products based in North Carolina, said it plans to leverage satellite communications to enhance one of its major products.

Homeland said this move was prompted by market demand for a version of its “Cyber Tracker” able to function in remote areas of the world. The company described Cyber Tracker as a “smart box” GPS tracking device that provides efficiency and versatility.

Homeland has begun the process of integrating a satellite modem into its existing Cyber Trackers. The integration is expected to be completed by third quarter of this year.

Homeland CTO Ian Riley said the integration of satellite communications into Cyber Tracker will allow the company to deploy its products in areas of the world where there are no existing cellular communications. This modification will also make the new device utilize the intelligence of Cyber Tracker’s base platform along with the ability to transmit data from remote locations.

Homeland’s Cyber Tracker technology has applications for data and tracking functions across a variety of industries, utilizing

NEW PRODUCTS

IDEN and GSM technologies. In addition, CDMA and satellite technologies are under development with release expected some time this year.

ND SatCom Introduces New Military Portable Satcom Terminal

FRIEDRICHSHAFEN, Germany — ND SatCom, an SES Astra company, will be introducing a new, light-weight yet powerful and extremely easily deployable portable military terminal to support transmission of voice, data and video. ND SatCom said the terminal allows for fully meshed, single hop network transmission.

The MPT1000 is suited for out of area missions, in remote or rough terrain where low weight and rapid terminal deployment is key. The terminal is portable and stowed in two cases, allowing for easy transportation whether on foot, ATV or car. The system can be pre-configured, hence requires no on-the-spot configuration and is up and running in under 15 minutes according to ND SatCom.

The portable terminal is designed for Ku-Band operation and an X-Band version is currently under development. ND SatCom said the terminal consists of a one meter six-piece twin skinned aluminium reflector antenna, an LNB, a 4 W SSPA, a tablet PC with integrated GPS and a compass, as well as the stand alone ruggedized modem.

The modem is based on ND SatCom's SkyWAN technology which offers flexibility, scalability and efficiency, and allows for data rates up to 8 Mbit/s. MF-TDMA satellite channel access is used to provide fully meshed connectivity between all network nodes and to efficiently exploit the satellite channel capacity. Resources are assigned to a user station only when needed. The integration of real-time and non-real-time services is emphasized in the SkyWAN approach which is based on packet switching technology.

The MPT1000 provides an Ethernet interface which connects the user's Internet Protocol (IP) based networks and equipment. According to ND SatCom, the MPT1000 fulfills the MIL-STD-810E requirements and is thus operational in almost all climatic conditions from cold to hot and from dry to humid. Due to the wide range DC power input, the system can be operated with different types of batteries available in the customer's logistic chain or directly from the transport vehicle.

SeaMobile Unveils Wireless Services to Geolink's Maritime Customers

PARIS & SEATTLE & BOCA RATON, Fla. — SeaMobile, Inc. a provider of at-sea communications, connectivity and content services, has announced that it has launched its proprietary wireless technology for customers of Geolink's OceanCell service. Geolink is a provider of satellite-based broadband communications and networking services with extensive experience serving the European market.

In addition, the company formally announced its multi-year contract with Wireless Solutions International, Inc. (WSI) to provide roaming services to Geolink customers in Europe using the WSI OmniRoamer Sponsored Roaming Service.

In December 2006, SeaMobile acquired Geolink and in less than one month, the transition to the SeaMobile technology platform has been nearly completed. The SeaMobile technology is a sophisticated IP/software based solution that allows any type of phone used by the wireless customer to access the SeaMobile network at sea.

"By using the SeaMobile technology platform, Geolink OceanCell customers are accessing a state-of-the-art GSM cellular switch located at SeaMobile's teleport," said Jim Ellis, SeaMobile chief technology officer. "SeaMobile owns the switch, enabling us to better control the quality of service and enhance wireless voice and data service features for Geolink's more than 50 cruise and ferry vessels."

WSI's OmniRoamer provides extensions to a terrestrial wireless network, in this case European operator Manx Telecom, a Telefónica O2 Europe company. OmniRoamer enables subscribers of Manx Telecom's roaming partners to utilize services provided aboard an increasing number of cruise ships, ferries and yachts around the world, including those served by Geolink OceanCell.

GlobeCast WorldTV Expands, Launches Armenian Russian Channel ARTN in U.S.

WASHINGTON, D.C. — GlobeCast WorldTV, a distributor of international television and radio programming in America, has launched ARTN, the first 24-hour Armenian and Russian language television network in the United States.

NEW PRODUCTS

The new channel will be distributed directly to consumers throughout the United States as part of GlobeCast WorldTV's European bouquet, which also includes channels from 14 European countries including Italy, Poland and Romania.

Produced live from ARTN's Los Angeles studio, the free-to-air service will offer the rapidly expanding Russian and Armenian communities in the U.S. a wide variety of cultural and entertainment programs including travel, fashion, food, children's programs, game shows and an every day broadcast of soap operas.

Due to Russia's recent economic resurgence, there has been an increased global demand for Russian-speaking channels. However, in addition to Russian and Armenian, ARTN reaches a host of communities originating from neighbouring Eastern European countries, such as Belarus and the Ukraine.

GlobeCast WorldTV's international programming via satellite in the U.S. now offers in excess of 200 global TV and radio channels, in more than 35 languages to 42 countries worldwide.

GlobeCast WorldTV is a subsidiary of content management and delivery company GlobeCast.

Globalstar Launches Smaller, Lighter Satellite Telephone for US Market

MILPITAS, Calif. — Globalstar USA, LLC has announced the US market launch of the GSP-1700 next generation satellite telephone handset. The California based satellite service provider also re-introduced its \$29.99 per month E-Star Emergency airtime rate plan and launched limited time price reductions on all annual satellite airtime plans for new customers in the United States.

Globalstar said its GSP-1700 mobile satellite telephone sets a benchmark for satellite telephones capable of global satellite use. Weighing approximately 7.1 ounces (203 grams), the Qualcomm manufactured satellite handset is nearly half the weight of the current Globalstar telephone and close to 45 percent smaller (by volume).

The lithium-ion battery is designed to provide users with four hours of talk time and 36 hours of standby time. The GSP-1700's lightweight ergonomic design embodies the ruggedness of the current Globalstar phone while integrating convenience-oriented features such as a new color display, lighted keypad and portable headset capability.

The phone supports select Bluetooth accessories, six operating languages and MSS industry leading data speeds of up to 9.6 kbps or 38 kbps with compression, Globalstar said. The GSP-1700 is available in three vibrant faceplate colors, using durable high-luster or metallic finishes.

XM Radio Online Available With Windows Vista

WASHINGTON — XM has announced that XM Radio Online will be included in Microsoft's new operating system, Windows Vista. Windows Vista, which will be broadly available on January 30, will offer XM Radio Online as part of its digital music hub.

XM Radio Online delivers more than 80 radio channels, including commercial-free music, the Oprah & Friends talk and lifestyle channel, "The Bob Edwards Show," "Opie & Anthony," stand-up comedy, and children's programming.

My-Chau Nguyen, XM senior vice president for marketing programs and operations, said by working with Microsoft, XM is expanding the availability of XM Radio Online. "The integration of XM Radio Online further enhances the music and entertainment experience offered by Windows Vista," he said.

Newtec's DVB-S2 Equipment Provides Higher Efficiency for Satellite IP Applications

SINT-NIKLAAS, Belgium — Newtec is launching its new Elevation product line, a series of professional satellite communication equipment specifically designed and optimized for IP applications.

Built on a cost-effective design but based on an extremely efficient implementation of the DVB-S2 standard, Newtec said the new equipment is ideal for medium-rate data applications for which both investment and operational costs are sensitive factors.

Newtec said new IP encapsulation protocols, high modulation schemes and advanced features like VCM and ACM allow for maximum bandwidth efficiency and operational flexibility in applications such as primary distribution for IPTV, corporate networking, IP trunking, GSM backhauling and IP-based DSNG.

With the increasing importance of IP in all domains of telecom-

NEW PRODUCTS

munications, operators are expecting satellite equipment to become network appliances. It should integrate seamlessly with the terrestrial part of the network, be simple to use, and optimize the efficiency of the network at an affordable cost.

But according to Dries Coppens, the product manager of Elevation, satellite communications remains a domain where reliability is essential. Elevation, he says, is designed for the specific requirements of IP networks but does not compromise on quality.

Agilent Introduces Ultra-Wideband Vector Signal Analyzer for Modulated Wideband Communications Signals

SANTA CLARA, Calif. — Agilent Technologies Inc.) has introduced a measurement system optimized for analyzing

modulated wideband communications signals that require wide-bandwidth signal analysis — going beyond the capabilities of traditional spectrum analyzer-based analysis approaches.

Agilent said the VSA80000A ultra-wideband (UWB) vector signal analyzer (VSA) system makes precise, accurate measurements for signal bandwidths up to 13 GHz. It is ideal for engineers working on UWB designs who need to run key compliance-based tests or troubleshoot and debug their systems, the company said.

UWB technology is enabling the move from hard-wired USB (universal serial bus) computer peripherals to wireless USB, and it offers users greater flexibility. Originally used in aerospace/defense applications such as wideband radar and satellite communications, UWB technology is being adopted for commercial solutions for short-distance communications and networking. **SM**

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COVER STORY

Satellite Serving Bandwidth to Hungry Cellular Operators

by Claude Rousseau

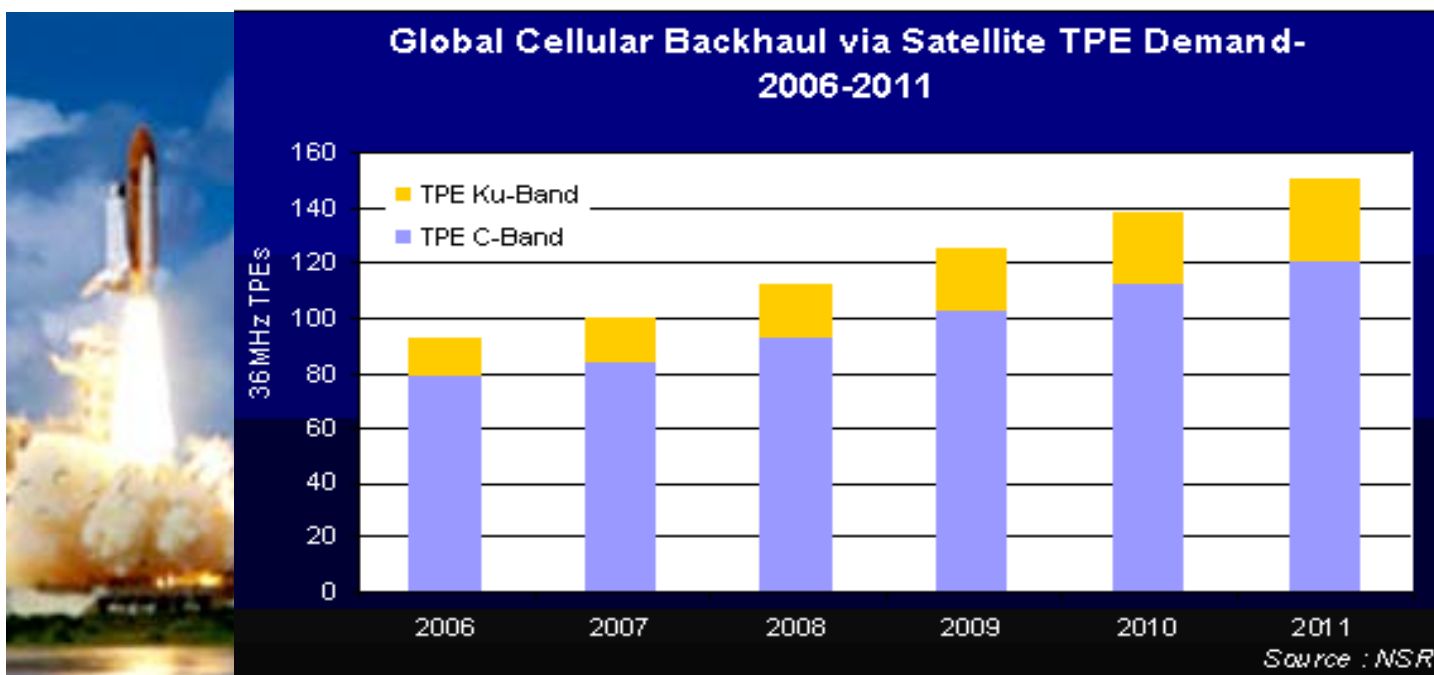
Satellite bandwidth and equipment is proving to be a strong ally to the mobile operators around the globe who strive to expand coverage to ever farther reaches of the Earth.

The robustness that the booming cellular industry is looking for today to fulfill the mounting number of customers calls not just within but also outside their network has been filled partially by a link in the sky.

The use of satellite to backhaul cellular networks started in the mid-90s with a few operators targeting high-revenues markets that, without a link that went the distance, was going to slip by them.

The cellular operators greenfield opportunities and network extension in key markets such as rural, low-density population areas such as islands or small cities helps them gain new subscribers and reduce churn. However, it also means that operators have to comply with changing traffic load throughout the network and increasing complexity in terms of routing at cell sites.

A variety of tools are now offered to cellular operators to solve these complex network issues, and satellite players have rolled-out a broad range of customer backhaul solutions for new and existing networks. The traditional voice and narrowband data services



COVER STORY



(such as SMS and GPRS) are prime applications that represent the most significant short-term growth opportunities for operators and form the basis of much of the current market size in terms of deployment and traffic.

In a typical cellular network, communication links are established at base transceiver stations (BTS) to backhaul signals and connect from the edge of the network to and from other parts of the network or to remote sites. The traditional leased-line transport architecture is unable today to provide affordable scalability across the networks. This led operators to adopt many backhaul solutions, such as microwave (by far the most popular) with satellite ranking high in specific developing countries and regions.

Satellite for cellular backhaul, much like land-based infrastructure, requires a forward and return link to enable proper communications services, and much like

it did for the old PTT's, it now has developed backhaul capabilities across continents for historical and new operators' cellular networks.

As stated by NSR in its recent *Cellular Backhaul via Satellite: Extending the Reach of Mobile Networks* report, satellite has improved its offering in recent years and is well-positioned to quickly deploy scalable solutions that help mobile operators face phenomenal growth that will see a doubling of backhaul expenditures by the turn of the decade.

The improvement made over the years has increased the potential for satellite to be considered a long-term staple of the market. It has demonstrated its robustness (notably equipment resistance to wide temperature variations at the BTS) and improved bandwidth efficiencies (which can push 50% more calls through the same transponders) that help bring down operational costs for more than ten years.

The main challenge however for the

players in this field is to decrease the unused bandwidth due to point-to-point architecture requiring an "always on" transponder capacity even when no communications are taking place. The percentage reduction is unused "time slots" as they are called in TDMA, the most-used cellular technology, and the decreased overhead in communications protocols between two points in the network is a key decision-factor of mobile operators when purchasing backhaul solutions. The estimates place the "unused" portion at 10% (others go up to 30%), and the problem with satellite is that by itself, the antenna and the bent-pipe do not address the whole issue.

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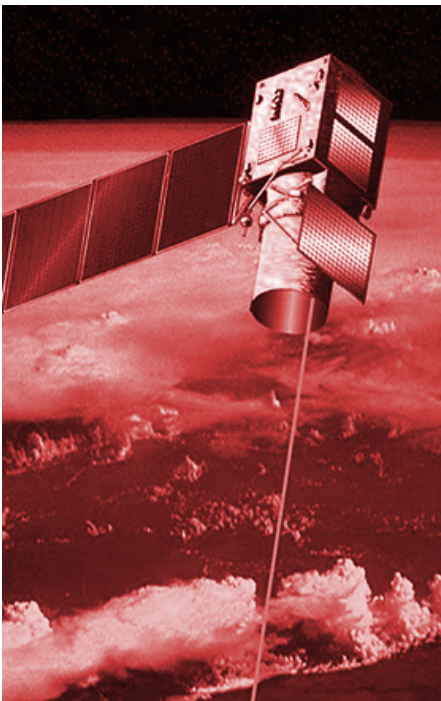
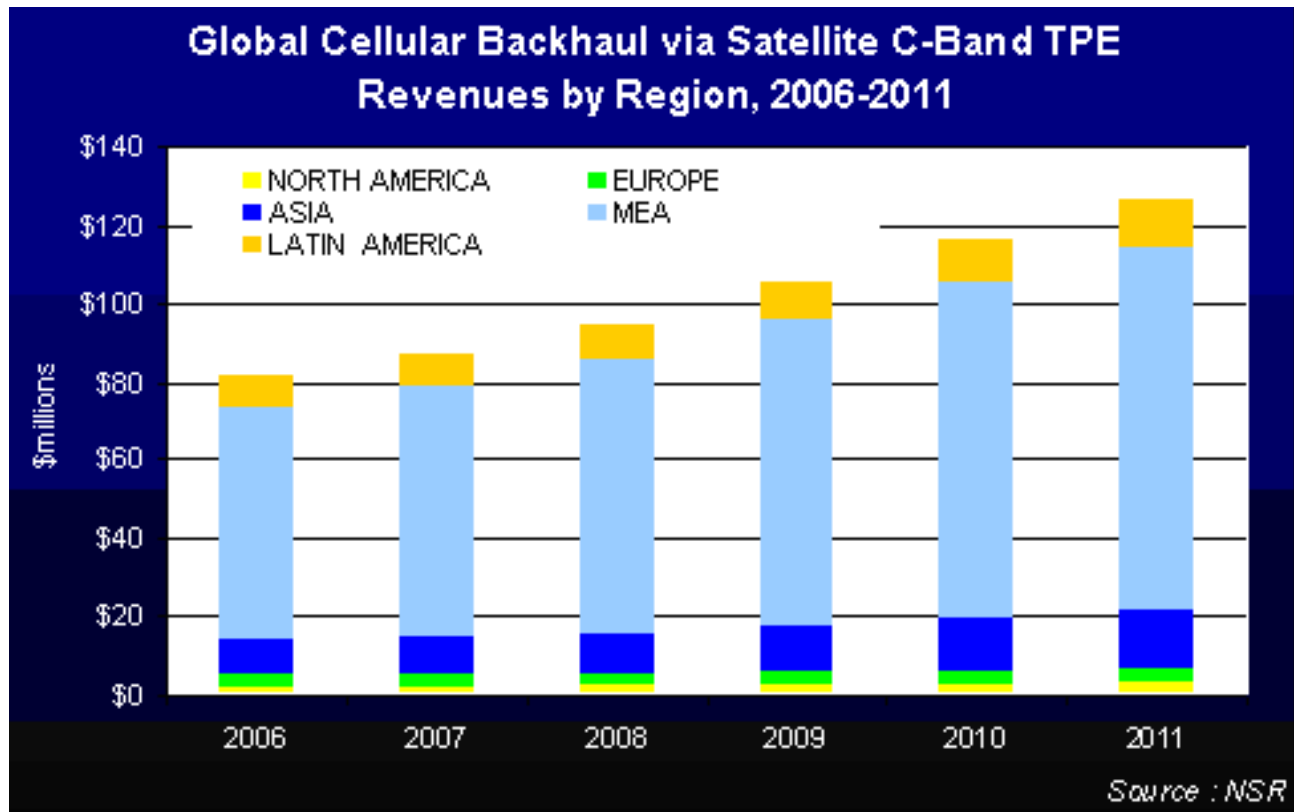

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COVER STORY



To make the link more efficient, various compressors and traffic optimization tools on the ground help cellular operators balance the requirements between voice and data throughputs and contain or decrease operating expenses, which is usually bandwidth.

As 2G networks are reaching out to grab market shares in virgin territories with more than 2 billion cellular phones users around the world, the requirements for backhauling calls rests on a robust set of tools and a call completion premise to avoid customer churn.

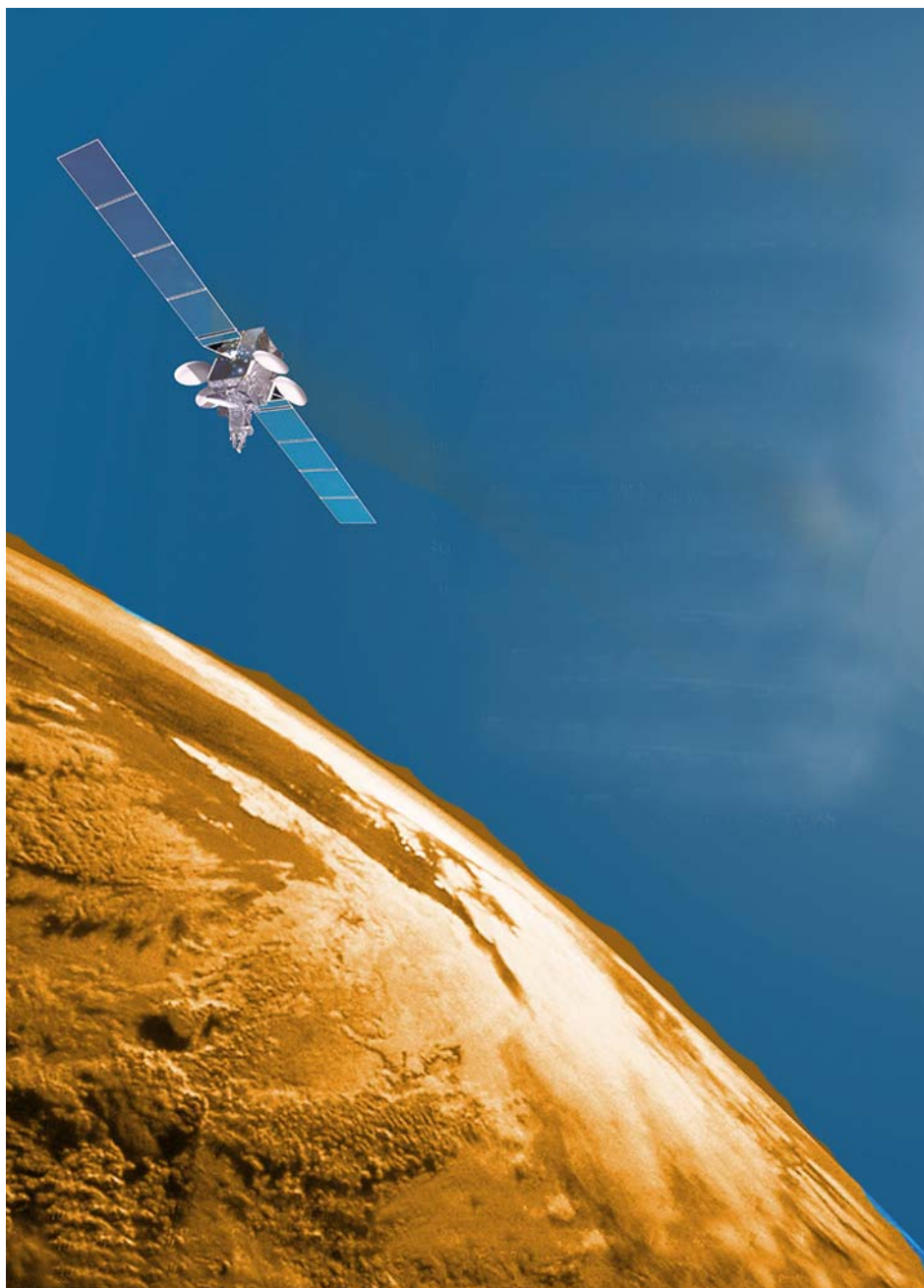
NSR believes that the satellite offering today can help cellular operators overcome more easily diverse geography, low population density, high capital expenditures and small market sizes. The geography and population

dispersion in specific markets such as Africa, Asia and Latin America has highlighted the benefits of coupling satellite and wireless technologies to backhaul cellular networks in order to provide the best and most efficient means and capabilities of deploying cellular networks farther out to remote regions quickly.

Satellite bandwidth in this market is tainted with the high-price perception, but a range of improvements have brought down the cost per Mbps to reach the cost of competing solutions.

The bottom line of the cellular networks is lower or contained operating expenditures with increased or at least maintained voice and data carriage in such places as sub-Saharan Africa where satellite leads the backhaul solutions

COVER STORY



according to Gateway Communications. NSR estimates that C-band transponder leases will dominate the cellular backhaul market and grow incrementally from 2006 to 2011. The overall total market from transponder leases will reach \$157 M by 2011. The key regions

in this market are the Middle East and Africa (MEA), Asia and Latin America where users continue to leap forward directly to mobile telephony services instead of fixed landlines.

In its report, NSR has determined

that when it comes to proposing satellite-based backhaul of its customers, mobile equipment maker Ericsson is the leader followed by Siemens, Alcatel, Nokia, and Huawei. Ericsson has deployed satellite-backhaul equipment for over ten years now and offers a full suite of backhaul products with software adaptations that enable them to work with various satellite equipment and capacity providers.

Satellite equipment manufacturers in satellite backhaul know that it is important to be technology-agnostic when it comes to cellular BTS technology and offer a high degree of interoperability through alliances with various vendors to gain a competitive advantage. Intelsat has been serving the market as a natural outcome of its long-serving relationship with PTTs and currently has a list of 60 cellular operators as customers. Others such as SES (through its subsidiaries NewSkies and Astra notably), Shin Satellite (through IPStar) and Eutelsat (to a much lesser extent) have a presence in the market as well.

Satellite today forms one of the pillars of the mobile telephony market's spectacular growth by meeting quickly and reliably some of its huge backhaul need. The recent market entry of end-to-end satellite backhaul solutions make bandwidth for satellite VSAT backhaul a cost-effective solution that is improving operations cost of mobile operators while feeding their bandwidth-hungry users around the world. **SM**



Claude Rousseau is Analyst, Satellite Communications for NSR. He can be reached at crousseau@nsr.com

FEATURE

Occasional Use in the Asia Pacific Region

By Michael Fleck

It was not long ago that the Asia Pacific region was something of a 'no-go' area for a whole range of satellite related services, especially for corporate users. While it was tough for full time leased services, it was more so for any kind of occasional use (OU). Anyone who tried to get ad hoc signals into or out of the region was faced with a plethora of problems including:

Overall reluctance on the part of service providers to offer OU anything!

Occasional use was unknown in the '90's so getting even the most basic

pricing information was a chore. The only recognised users of satellite services were the telcos, broadcasters and government and their requirements were 24 x 7. No one wanted to hear about an hour a week!

Regulations

In the early days every country had it's own licensing requirements making life tough for those wanting to install and operate satellite receiving systems. For example in Malaysia it was illegal for a business to use a TVRO. It took Global Vision three years of lobbying the Minister for Communications to obtain a

license for Texas Instruments to use satellite for training at their facility in Kuala Lumpur.

Slow response times, poor service

Three years to get a license was only part of the problem. Because the vendors did not understand OU they did not know how to respond to requests for information or quotes. The result was often weeks of chasing to get pricing.

High cost

Asia has long been made up of highly regulated economies. Monopolies remained in telecommunications for many years which made the cost of using satellite services in any form a very expensive exercise. Adding to costs was the fact that satellites covering even half the region were relatively low power which meant receive antennas were no smaller than 2.4 metres and usually 3.8 metres.

The first BTV network installed across the region used 3 - 3.8 metre C band TVRO costing an average of US\$25,000 per site. It is not hard to see why growth in this area has been so slow.

How things have changed.

We are pleased to report that for the most part there is a whole new world in the Asia Pacific region with OU now readily available and high quality. However, impressions from the '90's linger on today:



Ward, Inc on location In Tokyo for the Badminton World Championship 2006

FEATURES

Asia is *too difficult*
 Asia is too different
 Asia Is too expensive
 Asia is too hard

While these problems remain for the uninitiated, the situation is radically different in 2007. Large telcos are still there but today there are a number of professional business minded small operators offering world class services at commercial rates. This is good news for the thousands of large companies and government organisations with interests in the region because Asia Pacific can no longer be left out of the so called 'world-wide events' (formerly code for North America and Western Europe).

What we look for today in our technology partners is the opposite of the negative factors above. Our service standards depend on:

- Willingness to offer OU services
- Transparent navigation through regulations
- Rapid response times and high degrees of service
- Reasonable cost

Here's a quick look at some of the the best.

Sydney Teleport Services (STS) is a relatively new arrival in the Australian market having commenced operations 2 years ago. Scott Jenkins has set up a highly professional and responsive facility offering full domestic

and international teleport services with fibre to the US and Europe. It also has

local fibre connectivity to broadcasters and production companies in Australia.

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STS operates a 24/7 broadcast centre providing DTH services, adhoc services and has just commissioned two C band 5m tri-fold TES's that were deployed for the Australian Open Tennis and Kooyong Classic on behalf of EBU. STS also has access to Ku SNG's and fly-aways.

There are several studios available in support of the Teleport. They range from a small interview studio with point of view cameras of the city sky line to larger 300sqm and 1200sqm sound stages for TVC's and drama production.

Singapore has been a satellite hub since the launch of PAS 2 in 1994. In the same year **ST Teleport** began operations and now offers a full range of OU services including production studios, uplink, SNG, fibre connectivity and play-out from video servers, and standard analog/digital videotape players. Their hallmark is great service and responsiveness to client needs.

For links out of Japan it would be hard to do better than **Ward, Inc.** Mac Shimamoto has been involved in transmissions since the 70's and now runs a small but successful business based in Osaka. In recent time Ward has covered the F1 Japan Grand-prix as well as many world championship events, news and so on.

Their SNG facility (see photo) is equipped with production equipment, such as a switcher which can handle NTSC/PAL and analog/SDI, a mixer, a camera, an SX laptop editor for SP/SX and NTSC/PAL, IFB and telephone hybrid, intercom with 5 headsets. It has two redundant sets of Tandberg and Tiernan encoders and so they can provide a triple-path uplink with redundancy just by adding an extra encoder.

VARTA has been active in the satellite industry in India since 1992. In this time the company has developed from installing receiving and VSAT systems to operating SNG uplink and production services. VARTA now provides SNG uplink for almost all state visits including Chinese President Hu Jintao and Russian leader Vladimir Putin.

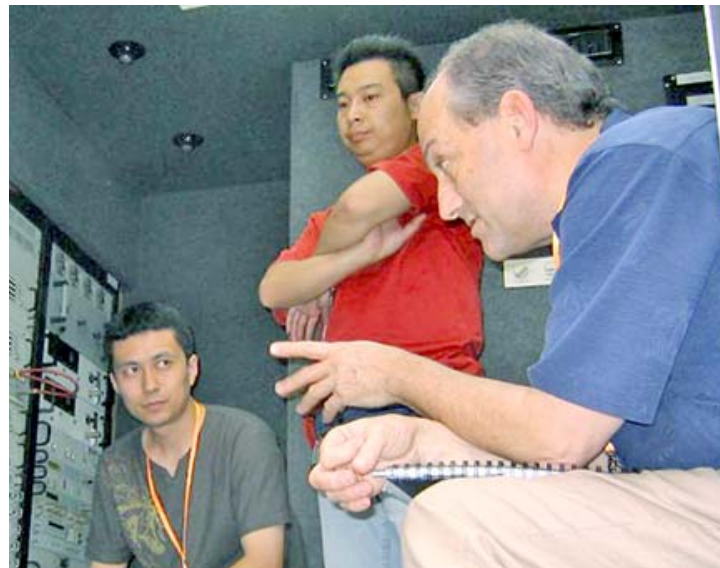
A big plus for having VARTA on your side in India is in navigating the maze of government regulations relating to uplink in India. They handle coordination with all government agencies on behalf of clients for any broadcasting/uplink/licensing issues.

Their range of services includes:

- DSNG Terminal (C-Band and Ku-Band)
- Production facilities
- Satellite Space (Ad-hoc and permanent) and
- Fixed teleport services

These are just some of the companies working hard to reverse the negative impressions of corporate satellite usage in the Asia Pacific region yet many hurdles remain.

Should you be planning an event or the roll out of a network in the region there are a few things to watch out for.



The author on location with SNG in Beijing

Geography Lesson

The Asia Pacific region is a big place, land mass alone is more than three times that of the continental US. It is also made up of many diverse cultures - there is no country called 'Asia'. What works in Korea may not be applicable in Vietnam and Japan is as different from the rest of Asia as the UK is from Europe. It pays to listen to those actively working in the areas you want to reach to avoid further complicating the task.

Events and networks often cross borders

Single location events are reasonably simple and can be put in place quickly and easily with a single vendor. Those that need multiple countries will require multiple vendors and this is where problems can arise for the uninitiated.

Be specific

When you want planning or pricing

FEATURES

information for events in the region it helps to give more than the usual details like date and time. We usually need to know a little more about the event itself and the intended audiences. It not only helps in suggesting the most suitable venues but may be needed for licensing.

Time of day

A critical element is time of day. There are eight timezones in the Asia Pacific region covering New Zealand to Pakistan so there is a lot of variation. If the event is to be live, be sure to check the local time at each receive point. As you will know, people in North America and Europe are reluctant to attend meetings before sunrise and very late at night. Residents of Asia are no different.

Given all the above it may appear that Asia is still too hard, but help is at hand. Any of the vendors above can assist with arrangements in their countries. When looking for an organisation to assist with multiple sites be sure to check them out on:

1. What is the level of experience in all the countries you need?
2. What resources do they have in each location?
3. Procedures - how do they manage the remote sites?
4. Communication - there are a dozen languages around the region, how do they deal with local people in each place?
5. Licensing - are they aware of licensing and local

government issues in each location?
How will they deal with these issues?

The Asia Pacific region is still a large, diverse and sometime daunting part of the world but it has come a long

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way since satellite started being used by the corporate world. Today we have leading edge production, transmission and reception technologies available just about everywhere. The attitude towards the occasional customer is positive and service levels are approaching world standard.

What is missing are the users - multinational companies which want to communicate with their Asia Pacific operations just as they do with those in the Americas and Europe. Organisations which understand that over 50% of the world people live in this region. Asia is no longer too difficult, too different, too

expensive, too hard. In the corporate and occasional use end of the satellite

market Asia is ready and open for business. **SM**



Michael Fleck is managing Director of Global Vision Networks, the Asia Pacific region's leading provider of services to the corporate world. Based in Sydney with representative offices in Hong Kong, Singapore, Chennai (India) and soon in Beijing, Global Vision offers complete turnkey solutions for everything from downlinks into hotels to disaster recovery capability across the region.

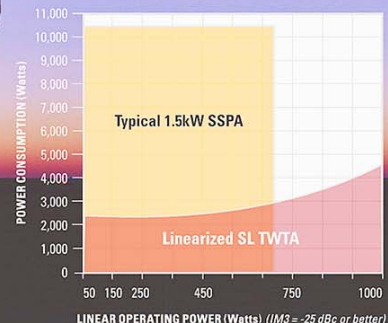
Global Vision Networks designs and manages permanent and occasional solutions for the enterprise market in 17 countries of the AP region. Since 1992 the company has assisted multinational corporations with a range of solutions including location television production, fixed and SNG uplink, temporary and permanent downlinks and an extensive network of satellite equipped five star hotels for special events. Michael can be reached at michael@globalvisionnetworks.net

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US Sat-Radio: 35m subs by 2015?

by Chris Forrester

In every conventional engagement announcement there's a bride and groom involved. In the case of XM Satellite Radio and Sirius, who said Feb 19 that they would merge, it is not precisely clear who is playing which role. Besides, this engagement has a couple of very influential relatives in the shape of the Department of Justice and the Federal Communications Commission. Without DoJ and FCC absolute approval no marriage can take place.

The logic behind a merger is inescapable: common programming, lower programming costs, removal of confusion for buyers who would now get 'all' the programming on offer; single product to be marketed, fewer staff, harmonisation over time of the satellite fleet – and once the merger beds down a potential savings target measured in the billions of dollars. The timing is probably right. Both outfits have sustained massive losses, and with a Republican administration probably now in its dog days as the USA counts down to a Presidential election, it is perceived that the merger has a better chance of success now than in two years time.

Both parties have brought in big-time lawyers to help guide the plan through. Sirius, for example, has hired a former FCC chairman Richard E Wiley to argue its case against the current FCC chairman Kevin Martin, incidentally a former member of the Wiley Reid law practice in Washington. It will be interesting to see how Commissioner Martin argues his view with his old senior partner. However, Commissioner

Martin is a bright, young lawyer and no pushover. Martin's comments on Feb 19 were blunt, saying that the merger would have some high hurdles to overcome.

Amidst all the hoopla and agonising about whether the two satellite radio rivals would ever make it to the altar, it seems most people have forgotten what the upside of such a marriage would mean.

A hefty 50-page report on the US satellite radio sector landed on our desk a few days prior to the announcement from William Kidd, now in place at Wedbush Morgan Securities (WMS). His timely overview examines the complete radio spectrum, including current and emerging technologies like Internet Radio, MP3 activity, the new-fangled possibilities offered by wireless streaming as well as the fight back from HD Radio and the existing AM and FM offerings. We'll look in detail at Kidd's analysis in a moment.

But Kidd is not the only banker keeping a close eye on the sat-radio sector, and Bear Stearns' senior analyst Bob Peck has been a true and trusted



XM Satellite Radio CEO Hugh Panero

guide through the whole 'courtship' between XM and Sirius. Peck says a merger would "likely pass" regulatory hurdles.

Peck talked about the potential share both parties might have in a new merged operation, suggesting that even though XM is ahead in terms of subscribers, Sirius has a higher valuation. William Kidd assumes – however - a merger will not take place, and conducts a thorough examination of the market. He extrapolates last year's 60% market share for Sirius' new subscribers compared to XM Satellite's efforts and predicts that more or less this 60:40 annual market share will continue this year before settling down to 58:42 ratio next year and then drifting a little lower to a 55:45 split by 2010 which continues until 2016. Within the annual figure, however, Kidd expects some seasonal fluctuations but his annual figure remains constant. Of course, if the two layers merge then this split becomes

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irrelevant.

Many of us have compared the rise of pay-radio with that of pay television. This would be wrong, says Kidd. The structure is essentially different. "Satellite radio's vertically integrated structure differentiates it from most major media businesses," Kidd stresses. "Both Sirius and XM Satellite operate their own respective networks as well as own and produce a vast majority of their network content. The net result is that not only is there a structural barrier to new competition due to the absence of available spectrum (the FCC awarded only two licenses for satellite radio), but also favorable economics due to relatively low content costs. The low cost stems from the fact that unlike in the pay television world, content providers like ESPN cannot comparably influence either satellite operator. This is because few radio channels are dominant in the minds of consumers. With television, consumers tend to only watch 10-20 channels out of hundreds, giving the providers of those 10-20 channels significant pricing power over cable and satellite television companies. This is not the case with satellite radio where music is often the consumer draw and music royalties are extremely affordable compared to the carriage rates of major cable networks," Kidd adds.

Kidd also rightly reminds us that the satellite radio sector is no longer built on a wing and a prayer, or as he describes it based on an investment thesis of "build it and they will come" optimism. He says that few now doubt that satellite radio will soon be a 20m subs business in the US, and perhaps in years to come a 30m-subscriber business. In other words well into the mainstream, and very much mass market. He suggests this can only get better with OEM supplies now ramping up nicely and predicted to be hitting their



stride over the next 5 years as more cars, vans and RVs coming pre-equipped with sat-radio units.

Kidd expects Sirius to move into 'free cash flow' this year having already declared it was FCF positive in Q4/2006. He says XM will be in a similar position during this year. Kidd also gets back to basics, and reminds us that satellite radio in the US has already generated more hard subscribers than satellite TV did in a comparable time frame, or cable TV, or cellular telephony, on-line movie rentals, etc. He adds that the basic premise, of 'commercial free' channels is still a strong selling point. Add in the specialty services from both players, the Howard Stern and Oprah 'channels', plus the exclusive sports deals, and the product offering is strong. And the

market is still huge. US adults spend an average 20.25 hours a week in their vehicles. That target market, of some 124m commuters, is simply massive with an average commute each way of 25.5 minutes. Even better – at least for the radio industry – is that 43m spend more than 1 hour to get to and from work. There's also still an untapped market: A recent Arbitron/Edison research study found that 8% of Americans are "very" interested in HD Radio, while 18% of those surveyed and who do not currently subscribe say they are likely to subscribe over the next year.

The 'after sales' market, as well the retail supply of so-called home boxes, has benefited both players hugely. But those sales have softened lately. This has "caused some to be incrementally more pessimistic," says Kidd. "In early 2006, Sirius and XM started the year with a combined guidance of 15 million year-end subs. Both adjusted those tallies during the year, and both ultimately missed their last guidance round (4Q06) set in their 3Q06 reports. At the same time, NPD, a market research firm, had been releasing retail unit volume estimates, namely monthly year-over-year changes, which showed weakness for the second half of 2006. Nevertheless, the combined tally for both companies still managed to reach 13.7 million subscribers, which was good but well under where guidance initially stood for 2006."

XM4's sale & leaseback

XM Satellite has sold its latest satellite, by means of a \$288.5m sale & 9-year leaseback deal on its XM4 craft. The thought is that such a move would avoid the need to restructure its credit line. The deal "appears to give XM a liquidity cushion of about \$200 million" until it reports positive cash flow in the second half of 2008, Jonathan Jacoby, an analyst with Banc of America Securities, wrote in a note.

Kidd suggests that some of this softening was down to a lower than anticipated sales and marketing effort from XM and Sirius because of the FCC drive on devices claimed to be creating interference. But the retail declined even

FEATURES

when new marketing efforts kicked in, with year-on-year sales sliding (August: -3%; September: -12%; October: -25%; November: -45%), leading to a whopping 46% decline in year-over-year unit sales for December 2006,” says Kidd, quoting NPD/Orbitcast data). Without doubt part of these “declines” is the aftermath of the ‘Howard’ effect on Sirius of the previous year. Kidd also thinks there might well have been other tempting attractions for consumers’ wallets, not least HDTV and iPod devices.

The ‘Howard’ effect is also examined by Kidd. “We believe Howard Stern’s importance does not end with the conversion of some small percentage of his loyalists. Howard Stern plays an important role in winning subscribers for Sirius, even for non-Howard listeners. Specifically, it is our belief that Sirius has a content advantage relative to its competitor that is readily perceptible by many potential subscribers. For the most part, potential subscribers don’t really know how their satellite radio experience is going to turn out; they probably have spent very little time with either system. Therefore, when they can identify key, recognizable content on a particular system (and no content is more important than Howard Stern in the radio world), it registers and resonates with them.”

Satellite radio hardware costs are no longer a barrier to entry. Devices are available pre-installed prices of just \$50, and as mentioned earlier, the supply of autos with pre-installed kit continues to grow impressively. Volvo, with this 2007 model year (already in the showrooms) will be factory installing Sirius units with a ‘free’ six months sub on its 4 major vehicle models (S40, V50, C70 and the new S80). Mitsubishi, effective with the 2008 season (in showrooms later this year) will offer Sirius as standard on its entire model line. Kia also has Sirius

contracted with an agreement that extends into 2014 with sat-radio a standard feature on all 2009 models. It’s much the same with Audi, already achieving a 50% install rate which grows with 2007 models through until 2012. Volkswagen, starting with 2007 models, expects to supply Sirius units to about 80% of their model range. Subaru is also active offering Sirius as dealer installed options. Sirius is a standard on Rolls Royce cars. Mazda is offering Sirius on the larger portion of their model range. Mercedes has a deal in place until 2012 and fits Sirius as a standard install on all SL and CL class models. Daimler-Chrysler has a deal in place with Sirius until 2012, and is hitting a 40% rate for its output. BMW is exclusive with Sirius until next year, and factory-fitted Sirius units go into their 3, 5, 6 and 7 series cars. All Fords, and Ford-owned brands (Aston Martin, Jaguar, Land Rover, etc) install Sirius in a deal that extends to 2011, however Ford can elect to go non-exclusive from Jan 2009.

XM’s deals are not dissimilar, covering Toyota and Lexus (until 2017) and likely to hit 1m units a year by 2010. Honda is good with XM until 2016 and is expected to hit 650,000 units this model year. General Motors will ship 1.8m XM units this year, while Porsche is

Making XM available on its Cayenne models. Porsche and XM have a long-term agreement in place. Hyundai’s pre-fitted options started kicking in with 4 models out of their 2007 range, and Kidd says this is just the beginning of an aggressive roll-out for XM with Hyundai vehicles. Nissan’s Infiniti models have XM pre-installed and this extends to the full Nissan range with 2008 models. Kidd expects this to represent 1m units annually by 2010. Suzuki has also been pre-installing XM since 2006 with some models.

Kidd says that XM can attempt to steal some of Sirius’ agreements as they come up for renewal. And even if unsuccessful, the end result might well be to bid up the existing agreements already in place, as Echostar did when chasing DirecTV’s NFL deal. However, Kidd’s report issues a note of caution, citing the XM agreement to secure Oprah for 3 years but at a cost of \$55m being an “irrational” and not comprising compelling content. “We think,” he says, “Oprah at \$55 million over three years is a prime example of XM acting irrationally.... Unlike Howard Stern, who is more than successful in the medium of radio and broadcasts for 20-25 hours per week by our estimation, Oprah’s channel on XM only features Oprah for 30 minutes per week. It’s merely a forum for Oprah to promote her friends on XM’s dime. In other words, Oprah on radio is all sizzle, and no steak. Besides, Oprah is free on TV, and Howard is essentially exclusive to satellite radio—*another huge difference*. We wonder why XM doesn’t just attempt to win the “who’s the better investment race” by having more subs and lower programming margins. XM needs to realize that there is not another Howard Stern out there. And that without him, the odds of the NFL or NASCAR allowing for XM to surpass Sirius in retail market share is about nil (unless Sirius has a catastrophic satellite failure).”

But where does all this activity leave the two players (and again assuming no merger or acquisition activity) a few years from now? Kidd is bullish: “By 2015, the terminal year of our forecast, we forecast almost 7 million OEM gross additions. This is based on the belief that new cars will still continue to number 15-17 million per year and that satellite radio should be able to improve on its market share levels as more and more users become accustomed to its service. Pay television penetration rates

FEATURES

have grown for well over thirty years. And if pay television is any indicator, it would be unreasonable in our minds to assume that a terminal penetration level for satellite radio will be visible sometime within the next five years (especially considering that many OEMs will still be ramping their production commitments during that horizon). Importantly, at least in terms of a reality check, at 7 million forecast gross adds in 2015, we believe our forecast does not imply anything other than wide acceptance of satellite radio. We believe our forecast represents OEMs production levels not too dissimilar from what the more aggressive OEMs are already committed too; in other words, our satellite radio forecast is not based on the world becoming factory-installed standard, though surely, that is a possible scenario."

Kidd examines all the other key elements of the sector's business profile, not least Subscriber Acquisition Costs (SAC), which for Sirius have tumbled from the horrific \$330 back in 2004 to a more palatable \$140 or so this year, and predicted to fall about \$100 by the end of the decade, and around the \$75 mark by 2015. XM's SAC costs are lower. But there's an obvious hidden advantage: second hand cars. With millions of vehicles now on the road with either XM or Sirius installed this after market should start helping out both players with new subscribers NOT needing any heavyweight SAC.

Kidd also examines the competition for satellite radio. "Today," he says, "Sirius and XM have roughly 14 million subscribers combined, which we believe roughly translates into twice as many listeners (28m). For perspective, satellite television (DBS) only had a touch under 10 million subscribers after its first five years of service. For perspective, by 2010, we believe satellite radio's subscriber base could reach 27m subscrib-

ers, which would similarly equate to about 54m listeners. This compares to traditional radio's audience base of 227m listeners and 19m listeners of audio streams on the Internet weekly."

What Americans call 'HD Radio' (and the rest of Europe calls DAB) is a growing threat and there are now 900 stations transmitting digital radio, with a target 1200 stations and 90% of the population to have technical coverage by year-end. While audio signals are improved, the main driver is extra station choice for a community or region. Fortunately for satellite radio, HD Radio is "arriving late" says Kidd. "We believe that satellite radio's success has likely been a major contributor to the slow adoption of HD Radio. Having said that, digital radio has been successful in the UK and Denmark, although in those markets, digital radio has never had to grapple with satellite competition." HD Radio is also local, and at least on some bands, commercial free at the moment. But Kidd doesn't expect that situation to last. Internet radio now reaches about 12% of the radio audience, up from 8% in 2005, suggesting there's plenty of headroom in that segment. Kidd speaks optimistically of next-generation WiMax-based wireless services, especially the 802.16 so-called wireless broadband applications and upcoming FCC auctions in 2008 for spectrum.

In terms of satellites, Kidd talks about the Sirius order for a GEO craft from Loral (the Sirius fleet to date is HEO-based) for launch about 2009. At that time, he suggests, "one of the in-orbit HEOs would likely stop broadcasting and revert to an in-orbit spare until about 2012. During this period, we would expect the company to at least start the building/replacement process of its two older MEO satellites. Note that we would expect the company to keep its existing ground spare as a spare and not launch it."

Kidd predicts that by 2015 the two players will be drawing in total revenues of some \$7.3bn. That's an impressive business sector, with a combined subscriber base of around 35m. No doubt Europe's would-be players will be looking enviously at the prospects.

A US merger, however it is structured is another kettle of fish. A report at the end of February talked about the two players themselves only rating their chance of getting the deal passed by the regulators at no better than 55%-60%. This is perhaps why the pair are continuing to run their businesses wholly separately. The cut-off date is a year from now. If approvals are not in place by then the two businesses walk away from the proposed deal. **SM**



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

CASE STUDY

New VSAT Backup Solution Ensures Business Continuity

By Jeffrey Carl

With business continuity becoming an increasingly vital consideration for businesses of all sizes, satellite-based data networks have emerged as an essential backup connectivity platform. Because VSAT technology completely bypasses the local terrestrial last-mile infrastructure, it presents a uniquely valuable tool to ensure 100 percent uptime for mission-critical voice, data and video networks.

Local, state and federal government agencies have also become increasingly aware of the need for satellite communications equipment and capacity in the event of natural or man-made disasters. Experience has shown that traditional wireline and cellular communications will not be reliable in these situations - even new emerging wireless technologies, such as WiMax and CDMA wireless broadband are ultimately dependent on the local transmission towers and terrestrial telecom infrastructure and will be subject to disruption in a local disaster.

VSAT is gaining popularity as a service for enterprises with high uptime requirements that are seeking the ultimate in diverse physical path backup/failover connectivity. On-demand (part-time) VSAT services are now available for failover connectivity or burst connectivity. These are usage-based offerings, so the customer only



One of America's largest oil companies is using the Cisco IP VSAT Module to ensure continuity of critical communications.

pays for what they need. Cisco recently introduced a satellite modem in a network module form factor (called the Cisco IP VSAT Satellite WAN Module) for their ISR routers, making the setup and configuration of VSAT for automatic failover connectivity easier than ever.

Another rapidly growing market for satellite services is transportable connectivity to government, homeland security and first-responder organizations. By putting an auto-pointing VSAT

antenna on the roof of a SUV or trailer, agencies can use the satellite modem as the backhaul for a "go-anywhere" mobile Internet access, VoIP or other communications command post that is deployable in five minutes or less.

Case Study: Major Oil Company Deploys VSAT for Business Continuity

The Gulf Coast hurricanes of 2005 drove home the importance of business

CASE STUDY



Major U.S. oil companies are discovering the value of VSAT as a backup connectivity platform.

continuity planning. For major U.S. oil companies in the region, the devastation of hurricanes Katrina and Rita highlighted the need to plan not just for transitory outages or network problems, but also for long-term communications failures. Those disasters also demonstrated that telco, cable and terrestrial cellular infrastructures are likely to be severely degraded in the aftermath of a major storm, creating a need for a truly independent and redundant means of communications.

Let's look at how one of the nation's largest energy companies coped with these disasters and implemented a communications plan to ensure complete continuity of critical communications in the future.

In the aftermath of hurricane Katrina, our case study company lost voice and data communications with some of its 16 Gulf of Mexico oil refineries. Wireline circuits (frame relay/T1, DSL and cable) were all out of service. Cellular communications were saturated and often unavailable. Voice and critical data communications of any kind were offline, and the refineries were completely isolated.

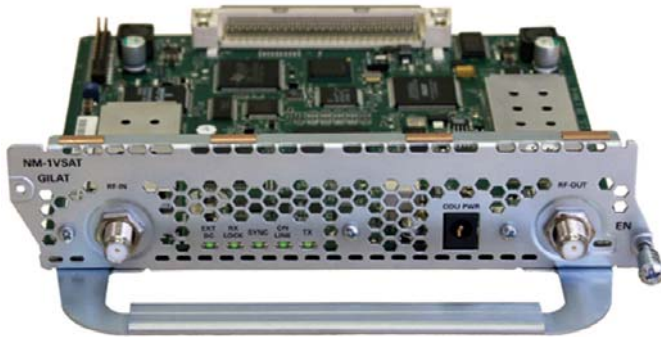
The company quickly learned that, without voice and e-mail links, refinery metrics could not be evaluated. Senior management was unable to make critical decisions, and employee and operational safety became a growing concern.

To deploy an emergency connectivity solution, the company turned to Spacenet. Within 24 hours, Spacenet delivered satellite terminals to restore critical communications services between the headquarters and the affected refineries – avoiding costly and time-consuming refinery shutdowns.

Once terrestrial communications were restored, the oil company re-

CASE STUDY

VSAT networks, such as Spacenet's Connexstar service, are gaining popularity among enterprises with high uptime requirements.



designed its disaster-recovery strategy to reduce its dependence on terrestrial communications links, and integrate a satellite back-up solution into its ongoing communications and IT infrastructure.

In early 2006, Spacenet deployed the Cisco IP VSAT Satellite WAN Module. This enables network managers to configure their networks to automatically "fail over" to a satellite broadband connection for voice and data if their primary links fail. The Cisco VSAT WAN backup solution enables the oil company to minimize service disruptions during disasters and terrestrial WAN outages by switching high-value or mission-critical communications to the VSAT network. This enables the oil company to maintain data communications between its Texas headquarters and each of its refineries in the Gulf area.

The on-demand satellite connection is configured on the router just like any other WAN interface, and routes are selected in the order specified by the network administrator. The entire switching process between terrestrial primary and satellite backup links requires less than two minutes. With up to 1 Mbps uplink and 3 Mbps downlink capacity available on the VSAT network, the oil company can retain the most business-critical data and voice communications services, facilitating continuity and recovery.

With improving bandwidth capabilities, on-demand service options, greater cost-effectiveness and unique options such as the new Cisco solution, VSAT is positioned as an ideal choice for WAN backup and disaster recovery. We expect VSAT to maintain its critical, behind-the-scenes role to ensure constant access to communications. **SM**



Jeffrey Carl is Director of Marketing for Spacenet Inc., one of the nation's largest and most experienced providers of satellite communications for enterprises and government. He can be reached at 703-848-1068 or jeff.carl@spacenet.com.

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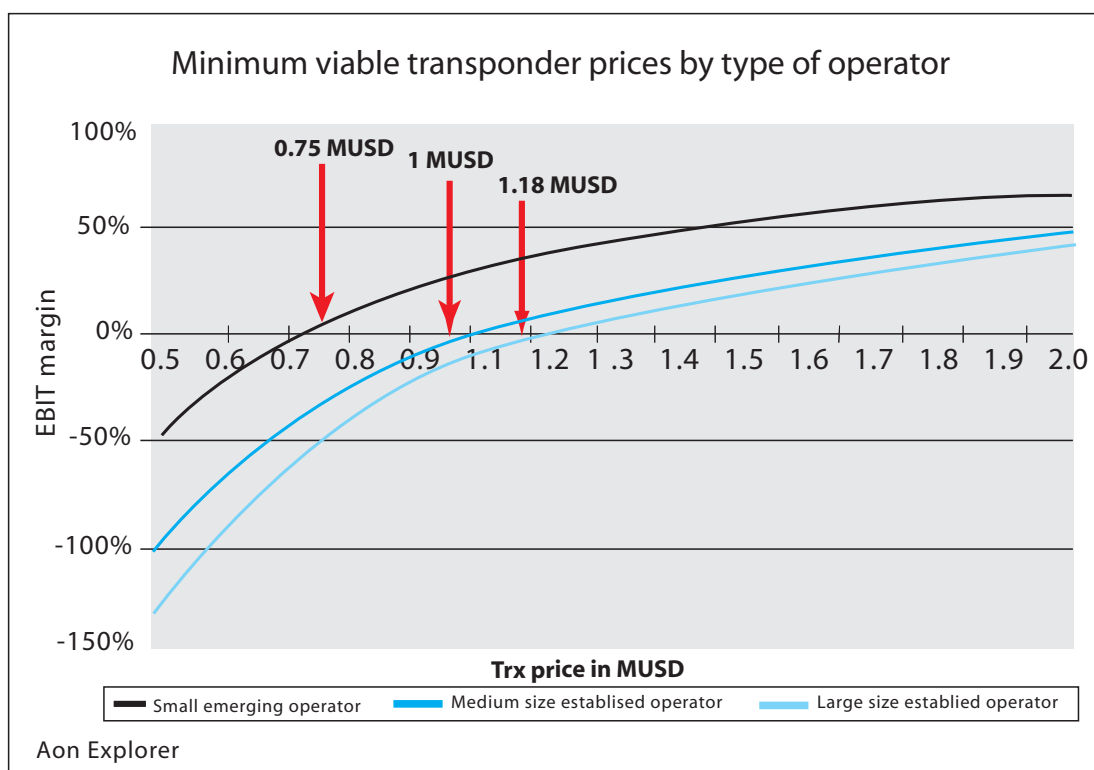
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VITAL STATISTICS



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- Global operators (10 satellites and more) benefit from large economies of scale. They are thus in a position to drop prices to increase their fill factors or enter new markets. Minimum sustainable prices are around USD 0.75 million, i.e. they can easily lower their prices to this limit to enter new markets in a stiff competitive environment.
- On the other hand, medium (3-4 satellites) and small operators (1-2 satellites) cannot lower their prices below USD1 M and USD1.18 M respectively on a sustainable basis.
- Therefore, small operators struggle to contain serious price competition while keeping their financials sustainable.



About Aon Explorer

Aon Explorer is the strategy consulting arm of Aon France in the aerospace and telecoms markets. Resulting from the acquisition of Vista Advisers in January 2005, Aon Explorer Strategy & Finance has developed a thorough expertise in business plans, feasibility studies, companies due-diligence both for the satellite industry and the finance community. Please contact Laurence Journez, Vice President, tel: +33 1 5875 6064, email: laurence_journez@aon.fr

MARKET INTELLIGENCE

Oil & Gas Communications in 2007:

Industry's "InterActive" Analysis

By Martin Jarrold

Chief, International Program Development

GVF *Satellite.
Solutions.
The World.*

In this column a few months ago I made reference to the three fundamental defining characteristics of satellite.

- **Cost Effectiveness:** The total cost of ownership of broadband via satellite solutions has been reduced by economies of scale, and globally, *over one million receive-only terminals* using IP multicasting have been deployed, together with *nearly one million interactive terminals*.

- **No Limitation of Distance, Geography or Location:** Unmatched cost-effectiveness of broadband over satellite also arises from the unique combination of broadcast capabilities within full networking solutions. With IP over DVB being the *de facto* standard for broadband communications over satellite, and with such systems clearly demonstrating their greatest cost-effectiveness by matching the asymmetric nature of Internet traffic.

- **Rapid, Economic and Reliable Deployment:** High-speed and secure delivery of all types of broadband applications is achieved through a single, end-to-end solution that is more reliable than terrestrial alternatives, flexible to fit with present demand, and scalable to fit all future requirements.

These defining characteristics, together with the facts of vertical market ICT requirements, will in 2007 once again

be brought together to drive an annual conference dedicated to the communications imperatives of the energy exploitation sector in key oil and gas exploration and production regions of the world.

Just before the time of writing this column, I heard news of the discovery of a major oil field southeast of Ghawar, Saudi Arabia. In addition, the international business media regularly features news regarding natural gas discovery and new distribution projects. Of course, favorable fresh discovery prospects in the natural gas sector are likely to stretch much further into the future than in the oil sector, given that the widely anticipated "Oil Peak" is thought by some to be with us right now. But, whatever the accuracy of such assessments, what is certain is that both oil and gas exploration and production sectors will continue for some time to call upon the telecommunications sector to provide and deploy the most cost-effective and reliable applications solutions all around the world.

The GVF **Oil & Gas Communications 2: North Africa and the Middle East Conference** – organized in collaboration with UK Event Management Partners (UK-EMP) – will follow on the acclaim for the first Oil & Gas Communications event held in May 2006. In 2007, the conference will once again take place in Cairo, Egypt, but in 2007 at a more central conference venue (in Heliopolis), and over 21st & 22nd May.



GVF welcomes **Schlumberger** as the conference Principal Sponsor for the second successive year, and we are pleased to announce that some of the major regional oil & gas operators – particularly **Qatar Petroleum** and **Dolphin Energy** – have already registered their participation at the 2007 event. The participation of **Stratos Global**, **Alkan Telecom**, and **Egyptian Space Communications** is also announced.

Chaired by a senior member of the GVF Secretariat, Day One of the conference will open with a Keynote Speech from a senior Ministerial official representing the policy and/or regulatory position of the Egyptian Administration in respect of the current status, and intended future development, of the elements of the national communications infrastructure that helps to promote the advance of the oil & gas sector with particular reference to those oil & gas vertical market segments represented within the national economy.

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Throughout the remaining two days of proceedings the emphasis will be on promoting discussion and debate, and to facilitate this, the conference format will comprise a series of clearly themed **'InterActive' Panels**. This series of **'InterActive' Panels** will be punctuated with both **Applications Case Studies** and **Showcase Presentations**.

Day One, 21st May, will feature a total of four **"InterActive" Panels**, as follows:

"InterActive" Panel 1 will provide an introductory foundation for the remainder of the conference programme, and is entitled ***Applications Evolution and the Dynamics of Oil & Gas Networking Communications***. It will provide an appraisal of the development of applications that are central to the mission-critical networking requirements of the various exploration and production segments of the oil & gas sector, together with a ready appreciation of the dynamics of current communications

technology trends. Panel 1 will assume a pan-regional focus in the form of an analysis of today's communications product and service environment within which the players in the vendor community compete to satisfy the efficiency and risk-management needs of the buyers of ICT solutions in the oil & gas environment in North Africa and the Middle East.

"InterActive" Panel 2 will take as its main focus the fact that the communications requirements of the oil & gas vertical are Internet-based and bandwidth hungry. In ***Bandwidth Supply/ Bandwidth Demand: Optimising Price, Quality and Reliability Variables in Oil & Gas Communications*** the emphasis will be on assessing how the accelerated deployment of communications technologies, that are providing essential broadband access for end-users in vertical markets like oil & gas sector, is also satisfying parallel demands for cheaper access through reduced bandwidth pricing. The objective of

Panel 2 is to provide both oil & gas end-users and telecoms providers an opportunity to put forward their respective positions and to jointly identify exactly how greater bandwidth supply and cost-effectiveness can be realised in the form of improved bandwidth optimisation and oil & gas sector-specific customisation techniques.

Oil & Gas Networking Innovation: Satellite and the Hybridisation of the Wide Area Seamless Solution is the theme of **"InterActive" Panel 3**. ICT solutions buyers in the oil & gas sector, or, indeed, any other, vertical – who are naturally interested in the fact (and cost-effectiveness) of the solutions they need rather than the details of the constituent mechanisms that contribute the solution – tend to be technology agnostic. Yet, the physical circumstances of oil & gas resource exploitation, and the industry requirement to link multiple sites – for example, inland and offshore – necessitate that companies in the sector buy wide area networking services which utilise various combinations of wireline, terrestrial wireless, and satellite platforms. Therefore, it is incumbent on communications industry operators and service providers to ensure that their offerings to the oil & gas sector continue to provide multi-platform, multiple technology, hybridized solutions to meet the complex and extensive voice, data, and video applications needs of this vertical environment. Panel 3 will investigate and explain how this is being achieved, and explore what more needs to be done.

The principle focus of **"InterActive" Panel 4** will be regulatory. Whilst cost-effective, reliable, and scalable communications are one of the essential precursors of production efficiencies for the oil & gas sector, exploration and extraction of these



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essential economic resources often take place where the policy and regulatory environments that permit access to, and use of, some or all communications platforms – such as satellite, terrestrial wireless (e.g. WiFi and WiMax) – is unfavourable and littered with obstacles. The **Communications Regulation and Vertical Market Growth Maximisation** session panellists will explore how the economic and industrial strengths of the oil & gas sector can be used to influence the policy development of governments and the rule-making posture of relevant administrations to secure more open and transparent regulatory and licensing regimes.

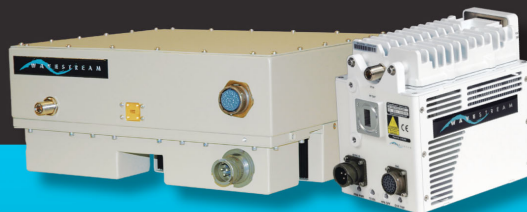
Chaired by a senior member of the GVF Secretariat, Day Two of the conference, 22nd May, will open with a Keynote Speech from a senior representative of an oil & gas company active in the North Africa and Middle East regions, and will feature a further four **“InterActive” Panels**, again punctuated with **Applications Case Studies** and **Showcase**

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“InterActive” Panel 5 will look at **“Future Evolution”: Advancing the Dynamics of the IP-Based Communications Solution**. Panel 3, on Day One, looked at the contribution of satellites to hybrid-based communications solutions for the oil & gas vertical. In Panel 5 the emphasis is on leading-edge, non-satellite-based, terrestrial communications technology developments and their current and potential impact on the ICT strategies in the business models of the – oil & gas sector – end-user, and in the communications solutions vendor offerings environment. An analysis and understanding of current trends in terrestrial wireless is an essential foundation for oil & gas ICT managers in the planning of future-use and purchasing decisions in the broadband, IP, applications and services marketplace. This will not be an exercise in *ad hoc* crystal ball-gazing, but a clear and expert overview of just how today’s communications technologies and the associated business models which are facilitating their deployment are most likely to yield end-users greater operational efficiencies. This will include an examination of how the use of different communications platforms is helped, hindered, and determined by geographically determined supply factors, as well as an analysis of the potential for spectrum allocation conflicts between terrestrial and satellite solutions.

Maintaining the Mission Critical Link: Oil & Gas Communications When Disaster Strikes is the theme of **“InterActive” Panel 6**. It will explore the real-world realities in the oil & gas environment of maintaining and restoring essential communications pathways during – and immediately after – connectivity interruptions such as natural disasters (including earthquake, flood and storm), and human conflict situations (such as terrorism and war). The effectiveness of different communi-



cations platforms in making useful provision for business continuity/disaster recovery/emergency management in various situations, particularly the unique contribution of satellite communications in such circumstances, will be examined in particular detail.

The world is facing the medium-term exhaustion of its known supplies of oil, and supplies of natural gas become more difficult to locate, tap into and transport to its consumers. In this context **“InterActive” Panel 7**, which is entitled ***Oil & Gas ICT: Mitigating the Resource “Exploitation” Tag***, will examine how communications solutions are working with advanced IT techniques to allow oil & gas companies to exploit reserves in ecologically sensitive environments whilst adhering to international treaty obligations and alert to the pressure of public opinion. In addition, in a politico-economic environ-

ment that is increasingly influenced by discussion of climate change, Panel 7 will explore how ICT developments in the oil & gas sector are advancing evolution towards a non-Carbon economy.

Collaborative Oil & Gas Communications: Sharing the Benefits is the title of **“InterActive” Panel 8**. With the communications dynamics of the oil & gas

sector extending beyond the geology and seismology of locating and extracting raw energy sources from underground or beneath the sea, to include the various individual segments of the industry vertical as a whole, the communications requirements of the industry are obviously very extensive. Panel 8 will explore the practicalities of extending the bandwidth employed by the ‘turnkey solutions’ that are so often required by ICT managers in the sector to a true end-to-end connectivity, that is able to serve not only the entire range of oil & gas industry communications demands at any one physical location but which can also be used by organisations and agencies within the local area, such as schools and local government offices, at times when the industry’s demand on the available bandwidth is low. A new take on sharing the benefits of connectivity and Bridging the Digital Divide! **SM**



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STOCK MONITOR

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Company Name	Symbol	Stock Price (February 27)	52-wk Range
APT SATELLITE	ATS	1.79	1.12 - 2.10
ANDREW CORP	ANDW	13.43	10.07 - 14.19
ASIA SATELLITE TELECOMMUNICATIONS (ASIASAT)	SAT	17.30	15.91 - 20.55
BALL CORP	BLL	42.66	35.06 - 46.45
BOEING CO	BA	74.13	53.33 - 74.61
BRITISH SKY ADS	BSY	36.83	33.59 - 44.78
CALIFORNIAAMPLIFIER CORP	CAMP	10.10	5.23 - 12.59
C-COM SATELLITE SYSTEMS	CMI.V	0.30	0.00 - 0.00
COM DEV INTL LTD	CDV.TO	2.38	0.00 - 0.00
COMTECH TELECOM	CMTL	31.62	22.9333 - 45.65
THE DIRECTV GROUP	DTV	15.80	13.17 - 16.79
ECHOSTAR COMMU- NICATIONS	DISH	29.82	24.44 - 32.33
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GILAT SATELLITE NETWORKS	GILT	8.29	5.68 - 10.26
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HONEYWELL INTL	HON	41.57	32.68 - 42.93
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INTEGRAL SYSTEMS	ISYS	28.56	18.18 - 28.75
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L-3 COMM HLDGS IN	LLL	84.54	64.66 - 84.84
LOCKHEED MARTIN	LMT	74.06	58.28 - 74.97
NEWS CORP	NWS	17.14	14.76 - 18.63
NORSAT INTL INC	NSATF.OB	0.7938	0.43 - 1.51
NTL INC	NTLI	63.18	55.52 - 70.79
ORBITAL SCIENCES	ORB	15.47	8.84 - 15.48
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RADYNE CORPORATION	RADN	14.23	7.15 - 16.33
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SES GLOBAL FDR	SDS.F	12.45	6.70 - 12.47
TRIMBLE NAVIGATION	TRMB	41.04	26.64 - 44.55
WORLDSPACE INC	WRSP	11.56	10.26 - 26.00
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