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The European Market

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"European broadcasting has never been in better shape." Or "It's a real challenge making any money." These two comments from senior suits at major European broadcasting companies sum up the current state of play.

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by Bruce Elbert

Despite growing competition from terrestrial wireless and fiber optic systems, the new IP environment provides many opportunities for growth of VSAT networks.

REGULAR DEPARTMENTS

NOTE FROM THE EDITOR

Industry Consolidation Continues

As we went to press, the second largest satellite operator, Intelsat, announced that it its purchasing the third largest satellite operator, PanAmSat for $3.2 Billion. The deal, if approved by regulators would create the largest satellite company in the world, surpassing the current largest operator, SES Global both in terms of revenue and number of satellites. The new merged company which will retain the Intelsat name, will have a fleet of 53 operating satellites worldwide and projected annual revenues of $1.9 Billion.

Just a few weeks before the announcement, PanAmSat purchased another operator, Europe*Star and announced a joint-venture with Japanese operator JSAT for a Ku-band satellite. The *Wall Street Journal* also reported a week before the announcement that Intelsat was in talks of a possible merger with Netherlands-based operator, News Skies Satellites. The merged company will have a lot of complementary synergies with Intelsat's traditional strength in the telecommunications market and PanAmSat in the video market. During the press conference announcing the merger, Intelsat acknowledged that it has had continuing talks with other operators, but did not specify which ones.

Surely more consolidation is in the offing. Transponder utilization rates are still well below capacity (it's 63% for Intelsat and 74% for PanAmSat) and there's increased competition from fiber and other carriers. The deal was facilitated by investment firms Deutsche Bank, Credit Swiss First Boston and Lehman Bros. Both Intelsat and PanAmSat wer purchased previously by a consortium of private investment firms as with other leading satellite companies. The merger is expected to close in 6-12 months, pending shareholder and regulatory approvals. Both Intelsat and PanAmSat are emphasizing that the two companies are "complimentary in customer, geographic and product focus," anticipating possible anti-trust or anti-competitive issues that may be raised by the merger.

How things have changed. Before SES was even founded in 1984, PanAmSat was the first private international satellite operator to challenge the Intelsat virtual monolpoy in international satellite transmissions. Since then, due mainly to the pressures from private companies like PanAmSat, Intelsat has been fully privatized and now has become once again the top global satellite operator.

The face of the satellite industry is continuously changing. We'll keep you apprised of developments.. Stay tuned...

Virgil Labrador

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CALENDAR OF EVENTS

SEPTEMBER

September 5-8, Paris, France
World Satellite Business Week 2005
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September 8-12, Amsterdam, The Netherlands
IBC 2005
Tel: +44 (0)20 7831 6909 / Fax: +44 (0)20 7242 8907
Email: registration@ibc.org /
Website: http://www.ibc.org/

September 13-16, The Waldorf Hilton Hotel, London, England
7th Annual VSAT 2005 Conferece
Maria Batet Sole
Tel: +44-1727-832-288 / Fax: +44-1727-810-194
Email: maria@comsys.co.uk
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September 20-22, Hotel Grand Ashoka, Bangalore, India
Satellite Users Interference Reduction Group (SUIRG) 2005 Annual Meeting
Tel: +1-941-575-1277 / Fax: +1-941-575-7048
Email: info@suirg.org / Website: www.suirg.org

September 27-28, Dubai, United ArabEmirates
MENASAT 2005 Satellite Summit to serve as private and public sector forum
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September 29 - October 1, Vicenza, Italy
SAT EXPO 2005
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OCTOBER

October 3-6, Salvador da Bahia, Brazil
ITU Telecom Americas 2005
John Jacobs
Tel: +41 22 730 5401 / Email: itutelecom@itu.int
Website: itu.int/AMERICAS2005/index.html

October 17-20, Atlantic City, NJ
MILCOM 2005
Steve Walley
Tel: +1-408-213-3000 / Fax: +1-408-213-3001
Website: http://www.milcom.org

October 25-27, Mumbai, India
SATELLITE & CABLE TV INDIA TRADE SHOW 2005
Mr. Dinyar Contractor
Tel: +91 - 22 - 24948280 / 2498 4273 / Email: scat@vsnl.com
Website: www.scatindia.com

October 26 - 27, New York, NY
SATCON - Satellite Applications and Content Delivery Conference & Expo
Michael Driscol l
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Website: www.satconexpo.com

Oct. 31 -Nov. 1, Marriot Grand Hotel, Moscow, Russia
2nd Russia and CIS Broadband Summit and MITEL 2005 Exhibition
Elena Peredelskaia / Tel: +44 (0)20 7596 5205 / 5000
Fax: +44 (0)20 7596 5208 (direct line)
Email: Elena.Peredelskaia@ite-exhibitions.com
Website: http://www.broadband-conference.com ; http://www.ite-exhibitions.com

November 1-4, Houston, Texas
Offshore Communications 2005
Inger Peterson
Tel: +1-772-221-7720 ext. 112 / Fax: +1-772-221-7715
Email: ipeterson@offshoresource.com
Website: www.offshorecoms.com

November 2-4, Beijing New Century Hotel Beijing, China
China Satellite 2005
Richard Theodor (Wozniak) Kusiolek / Tel: **+1-650-428-1872**
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FEATURED EVENTS

SATCON Conference & Expo to Focus on Satellite, Content Management, Distribution and Delivery Solutions

October 26-27, 2005
Javits Convention Center, New York City

SATCON, the Satellite Application and Content Delivery Conference and Expo, now on it's fourth year will be focusing on "Satellite Applications, Content Management and Content Delivery Solutions" in its 2005 edition to be held in New York from October 26-27.

"This year's SATCON will focus once again on the users' perspective of the industry — from the three primary customer groups: media and entertainment, military and government and the enterprise sector," said Susan Irwin, President of Irwin Communications and Conference Chair. "The changes in the technology, applications and structure of the industry will be discussed by an extraordinarily high level of speakers, including senior executives from the largest corporations using satellite services, senior government and military officials and CEO's of the major satellite firms," she added.

SATCON is one of the fastest growing shows in the satellite industry averaging 50 percent growth every year since it's inception in 2001. SATCON has expanded its focus this year to include content delivery and content management in addition to satellite applications. It will also feature over 110 exhibitors, 25 sessions and over 100 speakers.

The conference will feature three tracks of sessions including :
Military, Federal, State & Local Government, Homeland Security, Relief Agencies, and NGO's ·
Broadcast, Media & Entertainment·
Enterprise Applications for industries such as:

Retail, Hospitality, Food Service, Banking and Financial, Telecom& ISP's, Healthcare, Oil & Gas, Maritime, Shipping, Transportation & Fleet Management, Energy & Utilities, Manufacturing, Mining & Natural Resources, Service Industries, Distribution, and more.

Two Keynote Sessions will be highlighting the conference. The first on "The Satellite Industry Emerges: New Ownership, New Life, New Management" features speakers such as:

Pradman Kaul, CEO, Hughes Network Systems,
David McGlade, CEO, Intelsat,
Joseph Wright, CEO of PanAmSat and
Armand Mussey, President of Near Earth, Ltd. The second keynote session will focus on the military's defense requirements and will feature

Major General Dennis C Moran, Joint Staff Vice Director for Command, Control, Communications & Computer Systems, Dept. of Defense.

According to organizers of SATCON, the show features more end-user speakers and end-user attendees than any other satellite show and is regarded by many as "the most interesting satellite show" in terms of session content.

"We are pleased the industry and the end-user communities have embraced SATCON and made it such a popular event to attend. The military, broadcasters and enterprise firms support SATCON in a big way, and that shows us we are doing the right things as we continually develop and improve the event each year," said Michael Driscoll, SATCON Event Director.

"It's been extremely gratifying to me to see SATCON evolve into a user-focused conference and trade show, having been attending industry conferences for so many years in which the primary activity has been vendors talking to vendors," said Conference Chair Irwin. "SATCON has singlemindedly focused on the end user and truly providing the customers' perspective. Any enterprise, government or broadcast executive who is looking at communications solutions, can benefit from the experiences of those who have done it—what works and what doesn't. SATCON provides the ideal forum for this exchange," she added.

To encourage more users of satellite services to attend the conference, A limited number of complimentary full-conference passes are being offered by the organizers for "end-users," defined as "a current employee from a broadcast/media & entertainment firm, military, government or a private sector company that uses information and communications technology (ICT) but does not sell ICT services, equipment, integration or consulting."

"Major satellite companies are sponsoring SATCON including Intelsat, Hughes, Artel, GlobeComm, New Skies, Thrane and Thrane, iDirect, Flextronics and Viasat, among others.

For more information on SATCON's program, registration or exhibition and sponsorship opportunities go to www.satconexpo.com or phone 203-371-6322 e-mail : info@jdevents.com

INDUSTRY NEWS

Ariane 5 Successfully Launches Thailand's iPSTAR Broadband Satellite

After an almost two-year delay, Thailand's iPSTAR broadband satellite is finally launched on Thursday from Kourou, French Guiana. *(CNES/ESA/Arianespace photo)*

KOUROU, French Guiana — Arianespace's lAriane 5 launcher successfully launched on August 11 Thaicom 4 (iPSTAR) during an early-morning mission from the Spaceport in French Guiana. The payload is the heaviest commercial satellite ever delivered to geosynchronous orbit.

Thaicom 4 is a high-power broadband satellite built by Space Systems/Loral (SS/L) for Shin Satellite Plc of Thailand designed to provide broadband services to both enterprises and consumers throughout 14 countries in the Asia-Pacific region. The satellite had a launch weight of 14,300 pounds (6486 kilograms).

The satellite has a massive total data throughput capacity of over 45 Gbps. It is designed to provide users with data speeds of up to four Mbps on the forward link and two Mbps on the return link. Thaicom 4 will use its seven on-board antennas to create 112 spot and regional beams in the Ku and Ka frequency bands. The satellite will generate 14 kW of electrical power throughout its planned 12-year service life.

Shin Satellite, aprovides C- and Ku-band transponder leasing, teleport and other value-added and engineering services to users in Asia, Africa, Europe and Australia. Shin Satellite owns and operates Thaicom 1A, Thaicom 2 and Thaicom 3. The satellites carry a total of 47 C-band and 20 Ku-band transponders offering over 100 channels. Thaicom is the hot-bird for Indochina, an emerging platform of choice for transcontinental satellite television broadcasts from Europe to Australia. The company is hoping that its efforts to develop new technology to make Internet via satellite more efficient would pay off with the launch of iPSTAR.

Once in operational service, Thaicom 4 will generate 14 kW of electrical power during its planned 12-year mission life, providing Internet access and broadband services to businesses and consumers through 84 spot beams, three shaped beams and seven regional broadcast beams.

Galaxy 14 Orbited; Satellite to Expand PanAmSat's US Cable TV Fleet

Starsem's Soyuz-Fregat soars to space successfully orbiting PanAmSat's Galaxy 14 satellite in an early Sunday morning mission from Baikonur Cosmodrome. *(PanAmSat photo)*

BAIKONUR COSMODROME, Kazakhstan — Starsem's Soyuz-Fregat launcher successfully orbited on Sunday PanAmSat's Galaxy 14 satellite in an early morning mission from Baikonur Cosmodrome.

The Soyuz-Fregat launcher lifted off from Baikonur Cosmodrome on schedule at 5:28 a.m., August 14, local time and climbed out on the power of its four first-stage boosters and central core second stage.

The flight was performed by Starsem as part of the cooperation with its Arianespace affiliate company, which allows the two launch service providers to best respond to their clients' needs. Galaxy 14 originally had been planned for launch on an Arianespace Ariane 5, and subsequently was switched to Starsem's Soyuz-Fregat to meet PanAmSat's operational requirements.

Galaxy 14 is the 24th satellite in PanAmSat's fleet. The satellite, to be co-located with Galaxy 12 at 125 degrees west longitude, will enable PanAmSat to have two in-orbit spares for its U.S. fleet, allowing the company to continue to provide the highest fleet redundancy and reliability in the FSS industry.

Although designated a back-up satellite, the powerful all C-band spacecraft is designed to deliver digital video programming, high-definition television (HDTV), VOD and IPTV service throughout the continental U.S.EU Clears United Launch Alliance,

Space Launch Joint Venture of Lockheed Martin and Boeing

BRUSSELS — The European Commission has cleared the creation of United Launch Alliance (ULA), a space launch services joint venture, between Lockheed Martin and Boeing.

The EU said the approval was made under the EU Merger Regulation. EU concluded the proposed transaction will not significantly impede effective competition in the European Union.

Both Boeing and Lockheed provide space launch services to governmental and commercial customers. Lockheed is active on the market with its Atlas family of launch vehicles as well as with Proton, a launcher produced in a joint venture with Russian partners. Boeing offers the Delta launch vehicles as well as

launchers produced by Sea Launch, also a joint venture with Russian partners. Both Boeing and Lockheed also produce and market satellites.

ULA, structured as a 50-50 joint venture, will combine the production, engineering, test and launch operations associated with U.S. government launches of Boeing's Delta and Lockheed's Atlas rockets. ULA is exclusively intended to serve the US government market for launch services.

INDUSTRY NEWS

Global Lease Revenues for Commercial Satellite Capacity to Hit $7.3-B in 2010, Says Northern Sky Research

ORLANDO, Fla. — Northern Sky Research (NSR) said demand for commercial C- and Ku-band capacity is growing at an average annual rate of 3.1%, and the total number of leased transponders should exceed 4,950 in 2010, up from 4,125 as of the end of 2004.

According to NSR's newest market survey and forecast report "Global Assessment of Satellite Demand: A Demand-Driven, Region-Specific Analysis of the Commercial Geostationary Satellite Transponder Market for 2004-2010," demand for C-band capacity is flat to declining in half of the regional markets investigated in detail, and the real engine for growth in most markets will be the lease of commercial Ku-band capacity for video distribution, Direct-to-Home (DTH) and emerging satellite broadband services.

To reach this conclusion, NSR structured the study such that in excess of 100 individual demand forecasts were performed in order to provide the detailed wealth of information the commercial satellite industry requires to successfully grow within an ever more competitive marketplace. Separate regional C- and Ku-band demand forecasts were performed for each of the major satellite applications investigated in the study.

These applications included the three cited above, in addition to video contribution & OUTV, telephony & carrier, narrowband VSAT and a group of other niche satellite services. NSR primarily utilized a bottom-up approach to build its market assessment for each of the following regional markets: North America, Central America & Caribbean, South America, the Atlantic Ocean Region, Western Europe, Central & Eastern Europe, the Middle East & North Africa, Sub-Saharan Africa, East Asia, South Asia, Southeast Asia, and the Pacific Ocean Region.

Stratos to Acquire Xantic for $191-M

BETHESDA, MD — Stratos Global Corp. announced on Aug. 15 the signing of a letter of intent to purchase the shares of Xantic B.V. According to Stratos, the transaction will create the world's leading provider of advanced remote communications solutions, with a significantly expanded geographic presence and customer base in the Americas, Europe and the Asia-Pacific region.

Under the terms of the agreement, Stratos will acquire 100 percent of Xantic, jointly owned by KPN N.V. (65 percent) and Telstra Corp. Ltd. (35 percent), for approximately US$191 million. But the price is subject to adjustment based upon audited EBITDA for the 12 months immediately preceding closing and specified working capital levels.

Xantic, with 2004 revenue of approximately $172 million, employs 270 people worldwide and operates two Inmarsat Land Earth Stations in Burum, Netherlands, and Perth, Australia. In addition, Xantic has been selected by Inmarsat to host the new Satellite Access Station for the next-generation Inmarsat BGAN (Broadband Global Area Network) service, slated for commercial launch later this year.

The combination of Stratos' presence in the Government and Military, Energy and Leasing sectors, combined with Xantic's position as a provider to the maritime and carrier sectors, gives the combined business a key presence in the key markets for mobile satellite services, said Stratos.

J.D. Power and Associates Reports: Satellite TV Penetration Increases Significantly

WESTLAKE VILLAGE, Calif. — The number of households subscribing to satellite TV service has increased dramatically over the past year, even as cable narrows the gap in customer satisfaction ratings, according to a J.D. Power and Associates newly released study.

Satellite TV service continues to erode cable's market share, increasing every year for the past 10 years and making its most significant leap this year, the study said. Currently, 27 percent of U.S. households only subscribe to satellite service — up from 19 percent in 2004 and 12 percent in 2000. Sixty percent of households only subscribe to cable service — down from 62 percent in 2004 and 66 percent in 2000.

"Although satellite providers continue to gain market share, overall customer satisfaction among satellite subscribers has declined while satisfaction among cable subscribers is up," said Steve Kirkeby, senior director of telecommunication research for

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J.D. Power. “Overall, satellite customers are still more satisfied with their service than cable subscribers, but if satellite providers want to continue to attract subscribers away from cable, customer satisfaction is a critical area where they can’t afford to lose ground.”

J.D. Power said for the first time since 2001, a cable service provider — WOW! (WideOpenWest) — holds the top carrier position in the customer satisfaction rankings. WOW!, which operates in major markets in Michigan, Illinois and Ohio, ranks highest among 14 of the nation’s largest cable/satellite companies with an index score of 717 (on a 1,000-point scale).

Space and Satellite Market Tops $103-B, Seen at $158-B by 2010

BETHESDA, Md. — The International Space Business Council has released its 2005 State of the Space Industry report, which shows world turnover generated from commercial services and government programs reached $103 billion in 2004 and is predicted to exceed $158 billion in 2010.

First released in 1997, the report was developed to provide industry, government, and financiers with an independent assessment of the trends and issues affecting the industry.

The report concluded “now is a good time to be involved in the space and satellite industry,” saying government funding for space is on the rise, commercial orders for satellites and launches have rebounded and stabilized, new exploration initiatives are being pursued, and entrepreneurial efforts related to radio, broadband, and space tourism are generating excitement.

It said, whatever one’s focus — on military, civil government, or commercial activities — is not necessary as there are numerous opportunities.

The report described U.S. export regulations under ITAR “the industry’s most serious issue” and states, “what initially was a nuisance to businesses has evolved into a serious problem for U.S. industry.”

Other highlights of the ‘2005 State of the Space Industry’ include:

More than $18 billion is spent annually on the development of space systems. U.S. Defense spending on space has grown from around $15 billion in 2000 to more than $22 billion today and is forecast to reach $28 billion by 2010. India and China have joined the U.S., Europe, Russia, and Japan as having fully independent capabilities. SM

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WildBlue Names David Leonard as CEO

Denver, CO — WildBlue Communications, Inc. announced on Tuesday David Leonard will be joining the company on September 1 as its Chief Executive Officer. Leonard comes to WildBlue from Liberty Global Inc., where he served as president of the Latin America Division.

Tom Moore, WildBlue's co-founder and current CEO, will relinquish day-to-day operating responsibility. He will, however, stay actively involved with the company as a shareholder and board member.

"WildBlue now needs a world-class operating CEO to drive the company to the next level of success - Dave has those incredible talents and I am really looking forward to seeing what he is able to accomplish," says Moore,

Leonard brings more than 25 years experience in media and telecommunications to WildBlue. Most recently, Leonard has been working with Liberty Global (LGI, formerly Liberty Media International) overseeing operations in Argentina, Chile and Puerto Rico. Prior to LGI, Leonard was founder and CEO at VeloCom Inc. which established the largest competitive local exchange carrier in Latin America.

He has served as either CEO or Board Member of several foreign and domestic entities including VTR (Chile); Cablevision (Argentina); Metrocall Wireless (USA); United International Holdings; Kabelvision (Sweden), and United Cable of Colorado (a subsidiary of United Cable Television Corporation). Leonard was named Ernst & Young's "Entrepreneur of the Year" in 2000.

An always-on broadband Internet connection, WildBlue's service provides two-way wireless high-speed Internet access.

Lockheed Names James B. Comey General Counsel

BETHESDA, Md. — Lockheed Martin has named James B. Comey, 44 as successor of Frank H. Menaker, Jr., 65, the corporation's senior vice president and general counsel, effective October 1, 2005. Menaker, who has served as general counsel since March 1995, will retire at the end of January 2006.

Comey joins Lockheed Martin from the U.S. Department of Justice, where he has served as Deputy Attorney General since December 2003. In this position, he oversaw many important government cases, including terrorism and securities fraud prosecutions.

Previously, he served as United States Attorney for the Southern District of New York, where he had earlier been an assistant U.S. Attorney and lead prosecutor in the highly publicized United States v. John Gambino racketeering and murder trial. From 1996 through 2001, he was Managing Assistant U.S. Attorney in charge of the Richmond Division of the U.S. Attorney's office for the Eastern District of Virginia.

TerreStar Appoints Robert Brumley as President and CEO; Wharton B. Rivers, Jr. Joins Board as Vice Chairman

MCLEAN, Va. — TerreStar Networks has appointed Robert H. Brumley as the company's new president and chief executive officer. Brumley joins TerreStar from Pegasus Global, an international firm specializing in telecommunications/technology, infrastructure development and aerospace/defense.

Brumley's extensive experience and background includes senior executive positions with global communications firms such as Deutsche Telekom and Bell Atlantic International where Brumley was responsible for Bell Atlantic's international telecommunications transactions worldwide, including its participation in Constellation Communications, Inc., a low earth orbit satellite venture.

Brumley also served as a Presidential appointee of the Reagan Administration, as General Counsel of the U.S. Department of Commerce, where he was chief legal officer of the Department and senior policy advisor to the Secretary. Brumley served on senior-level working groups of the National Security, Domestic and Economic Policy Councils. Brumley also chaired the Reagan Administration policy group that privatized commercial space transportation and removed NASA from the burden of launching commercial satellite payloads on the Space Shuttle (STS).

Measat Appoints New VP, Sales & Marketing

KUALA LUMPUR — Measat Satellite Systems Sdn. Bhd. (formerly known as Binariang Satellite Systems Sdn. Bhd.) has

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Diego Sutachan

appointed Diego Sutachan as vice president of Sales & Marketing.

Measat said Diego will oversee all of the company's key sales functions, including identifying new sales opportunities for the upcoming MEASAT-3 satellite (due for launch later in 2005).

Diego comes to Measat from Teleglobe, where he held the position of executive director, Asia Pacific Region, for 4 years. Prior to Teleglobe, Diego held various engineering, sales and marketing positions in Telecommunications and IT industry across Asia Pacific with companies such as Fujitsu, ComTech and AAPT Sat-Tel (now New Skies Satellite)

Scott Schneider Joins New Skies Satellites as Director

The Hague, The Netherlands — New Skies Satellites Holdings Ltd. has taken in Scott Schneider as a member of its board bringing the total number of directors to eight. Schneider, whose appointment takes effect on August 7, 2005, will also serve as a member of the company's Audit Committee.

New Skies said Schneider will serve as "independent" director under the rules of the New York Stock Exchange and the company's Corporate Governance Guidelines. He will serve as a Class II director.

Schneider is currently a member of the board of directors of Citizens Communications. He was previously vice chairman, president and CEO of Citizens from 2002 to 2004 and has held various executive positions at Citizens since 2000. Prior to joining Citizens, Schneider was chief financial officer and a member of

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the board of directors of Century Communications, where he worked from 1982 to 1999. Schneider also served as chief financial officer, senior VP and treasurer and a member of the board of directors of Centennial from 1991 to 1999.

ILC Appoints New Directors for Product Development and Federal Systems

ATLANTA, GA- Network control software provider ILC has appointed two new directors for product development and federal systems. Kim Harrington was appointed director for product development and Robert Huggins, director of Federal Systems.

Huggins comes to ILC from Harris Corp.'s Network Support Division where he directed the Government Sales Team towards $4.5 million in annual sales of network management products and services.

Huggins started at Harris as a systems engineer and later became a manager of business development, during which time he ranked as a top performer, securing and providing engineering support for multi-million-dollar orders. Previously, Huggins was section head of TRW's Federal Systems Group where he led the design and development of operations systems for programs such as the Anti-Submarine Warfare Operations Center (ASWOC) C3 Upgrade.

Experienced in end-to-end management of software lifecycles, Harrington will lead ILC's product development organization to handle increasingly complex demands as the company pursues both new and existing markets for its network management software.

Prior to ILC, Harrington was executive program manager at a major U.S. telecom service provider (RBOC) where he oversaw the execution of an extensive product portfolio including network management and provisioning technology. At telecom interconnect company Expanets, Harrington directed product strategy, implementation, market introduction and lifecycle for Internet telephony converged voice and data solutions, as the company grew from a start-up to a billion dollars in revenue.

NSG Datacom Appoints Bill Grant VP of Sales

NSGDatacom has appointed William (Bill) Grant to the position of Vice President, Sales.

Bill will report to Rich Yalen, Chief Executive Officer. Yalen said, "With Bill's background, NSG Datacom's product portfolio and new products being launched in the near future, I am excited about our ability to continue to grow the business profitably."

Grant said, "I am confident in NSG Datacom's commitment to offer our

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customers a compelling value proposition based on real world solutions for the satellite, government, military, financial, lottery and wireless markets." Grant has over 25 years of sales and executive sales management experience with established and start-up vendors of networking and communications equipment, selling to large enterprises and service providers worldwide.

WCC Expands Government Division

Robert C. Den Hartog

John D. Kilian

Chandler, Ariz., – World Communication Center (WCC), a provider of global satellite voice and data communications, announced the expansion of its Government Division with the addition of two industry veterans, John D. Kilian and Robert C. Den Hartog. Kilian and Den Hartog will supercharge WCC's government initiatives to provide reliable satellite communications disaster recovery initiatives, backup communication systems, military docking systems, and more to government entities worldwide.

Welcoming Kilian and Den Hartog, WCC CEO, Weldon Knape, says, "Our solutions deliver critical satellite voice and data services at all levels: subterranean, on-ground, within buildings and above-ground – as well as 24x7 live customer support – to users in areas that would normally be deemed inaccessible for communications. Our solutions are ideal for government entities and we are confident that Kilian and Den Hartog's in-depth experience in this sector will help us maximize business expansion."

Kilian brings over 26 years of government procurement and contacting management expertise. From 1999 to 2003, Kilian served as Area Manager for the Procurement Technical Assistance Center of Minnesota Project Innovation (MPI). where he collaborated with over 150 area local companies to secure business from federal, state and local governments. From 1994 to 1999 he was responsible for strategic development, standardization and management of government procurement processes for Northeast Computer Supply, Inc. He also worked for Motorola and Control Data Corporation. Kilian earned a Bachelor of Science degree from the University of Wisconsin-Stout and is an active member in the National Contract Management Association, National Association of State Procurement Officials and Association of Procurement Technical Assistant Centers.

Den Hartog's expertise includes sales, marketing and business development management. Den Hartog previously served as the Director of Sales and Marketing/Director of Business Development for the global R.C. Smith Company of Burnsville, Minnesota. He produced 20 to 35 percent of growth annually on government sales, reaching a record level for the company and expanded business into the United Kingdom, the Middle East and U.S. overseas military facilities. Den Hartog has also held sales and marketing positions in the medical arena including surgical and rehabilitation products, and founded the Savage, Minn. Chapter of Rotary International.

WCC has been working with numerous government agencies. The company was awarded a five-year U.S. General Services Administration (GSA) contract as an approved supplier of Iridium satellite phones services and accessories to all U.S. federal government agencies. Additionally, WCC helps supply the U.S. government in their efforts in Kuwait, Iraq and Afghanistan. A sampling of U.S. government agencies that WCC has worked with include: The U.S Coast Guard, Department of Homeland Security, The Marine Corps, NASA and the Environmental Protection Agency. WCC is also the sole provider of backup communications for the Oahu Civil Defense office in Honolulu, Hawaii.

Futron Corporation Names Bernardo Schneiderman as Business Development &Technical Director

Bernardo Schneiderman

Bethesda, MD — Futron Corporation has appointed Bernardo Schneiderman as Business Development and Technical Director of the Space and Telecommunications Division, responsible for expanding corporate activities on the West Coast and in international markets.

Mr. Schneiderman, who will be based in Irvine, California, has spent 30 years in the satellite and telecommunications industry. He has extensive experience in project management, business development, sales and marketing for satellite operators, telecommunications companies, VOIP carriers and equipment manufacturers in the U.S. and international markets. SM

NEW PRODUCTS

Gilat Ships 30 SkyEdge Hubs, 10,000 VSATs; Unveils SkyEdge Basic Hub for Small Networks

PETAH TIKVA, Israel — Gilat Satellite Networks Ltd. has shipped more than 30 SkyEdge commercial hubs and more than 10,000 SkyEdge VSATs worldwide.

Gilat's SkyEdge system is based on the concept of a single scalable hub that serves a variety of market segments. The SkyEdge hub is available in various configurations to support a wide range of networks, from small networks, consisting of a few tens of sites, to large networks that include tens of thousands of sites. These networks can be operated in either a dedicated or a shared hub environment, according to Gilat.

The SkyEdge hub supports a family of VSATs tailored for various applications such as broadband, VoIP, video, trunking and others. In addition, the SkyEdge platform supports both Star and Mesh topologies. This single hub allows the operator to simultaneously serve various customers, while providing security, Quality of Service (QoS) and management for each, as well as true network segregation.

According to Gilat, SkyEdge's unique system architecture enables network operators to provide specific services to different end customers from a single hub.

FAA OKs Digital Angel's New Satellite Transceiver - CommPoint 3 (CP3)

SO. ST. PAUL, Minn. — Digital Angel Corp. said its OuterLink subsidiary has been approved by the Federal Aviation Administration (FAA) for its new satellite radio transceiver.

Called the CommPoint 3 (CP3) Satcom Data Terminal, the device can track a wide variety of international commercial, military aircraft and ground vehicles in any weather condition, even when other traditional communication modes are disrupted. The CP3 is smaller, lighter and easier to install than its predecessor, the CP2, and, with models to be introduced in the fall, will allow OuterLink for the first time to address the international tracking marketplace.

"The FAA regulatory approval allows us to offer this product to both international commercial and military customers and utilizes advanced components to track vital equipment in locations and circumstances such as heavy storms or where aircraft are not trackable by radar," said Digital Angel CEO Kevin McGrath.

The CP3, although similar and compatible with the CP2, incorporates features that enable it to operate with communication satellites on a global basis. This capability will facilitate expansion of communication coverage from the existing North American service area to transoceanic and other continents, eventually providing global capability which is essential for providing real-time mobile asset management capabilities for the U.S. Department of Homeland Security and military markets.

Blue Sky Offers Online Global Satellite Tracking System for Transportation Asset Management

LA JOLLA, Calif. — Blue Sky Network, a global logistics solution for two-way linking and managing remote transportation assets via satellite, has released SkyRouter, an interactive Web portal with detailed mapping for tracking transportation assets anywhere on earth.

Blue Sky claims it is the first satellite tracking company to provide global tracking and event management (take-off, landing and inactive/active asset updates) on the Internet, allowing dispatchers and logistics managers to view their transportation assets anywhere, anytime.

Blue Sky said its SkyRouter system is reliable and completely secure, giving customers peace-of-mind when running their systems. Blue Sky Network customers can login to their online account and quickly locate all of their transportation assets (aircraft, vessels, land-based) across the globe in near real-time.

After a recent SkyRouter demonstration, Tom Bondurant, logistics coordinator for Unocal said we finally have a service that can monitor aircraft, boats and land transportation, with a single application. "Blue Sky Network provides the information customers need when and where they need it, and because they can be integrated with logistics as well as financial management

NEW PRODUCTS

applications, customers will be able to use their data in a real-time format to execute their business processes."

MDU Installs Single Wire Solution From DirecTV

TOTOWA, N.J. — MDU Communications International, Inc., a provider of DirecTV digital satellite television programming said condo, co-op owners and apartment renters now have unlimited access to the full DirecTV television experience after DirecTV has dramatically simplified the process of delivering its programming and services to customers living in multi-family housing.

MDU said a new advanced multi-satellite distribution system developed by DirecTV, and first installed by MDU Communications in a new luxury apartment complex in New York City, is now available to the MDU market nationwide.

Developed by DirecTV, this new technology is capable of receiving and distributing programming - more than 225 channels of sports, news and family entertainment - from each of DirecTV's existing satellites via a single wire to the MDU customer's home. This system more efficiently supports the use of multiple receivers, and has the ability to deliver other national, local and high-definition programming services. The system was designed to work with a building's existing wiring and also support older DirecTV receivers that are still in use.

A new 274-unit luxury rental property in lower Manhattan is the first building in the nation to have the new DirecTV single wire

NEW PRODUCTS

distribution system in operation. MDU Communications was the first DirecTV MDU dealer to install and utilize the new technology.

Qualcomm, Connexion by Boeing Test In-Flight Mobile Phone Communications

SEATTLE — Qualcomm Incorporated and Connexion by Boeing are working together to test and demonstrate in-flight wireless communications aboard Connexion One, a specially equipped Boeing 737-400 aircraft.

The companies said they have performed a series of test flights that successfully demonstrated the simultaneous use of CDMA and GSM mobile phone technology over an on-board network with infrastructure and integration support from UTStarcom, Inc. Using standard cellular communications, a small in-cabin CDMA2000 and GSM "picocell," or small cellular base station, is connected to the worldwide terrestrial network by an air-to-ground satellite link provided by the Connexion by Boeing high-speed airborne network.

Passengers on the test flight were able to use BREW-based data applications via Qualcomm's BREW solution. The BREW solution enables users to download business applications, 3D games, information and communication applications such as email and instant messenger wirelessly, over the air. Passengers also downloaded and watched video clips and made phone calls on a variety of mobile devices including 3G mobile phones.

NEW PRODUCTS

Audiovox and XM Unveil Xpress Radio, Thinnest Radio

HAUPPAUGE, N.Y. — Audiovox Corp. and XM Satellite Radio have unveiled the Xpress radio, a all-new XM plug-and-play receiver from Audiovox. The Xpress is being billed as the smallest satellite radio receiver to offer a five-line display screen.

Tom Malone, senior vice president of sales for Audiovox, said the Xpress offers brand new convenience features in a compact design, providing consumers with a sleek, functional device to access XM's amazing service.

The Xpress combines compact design and a five-line display screen, allows the user to search XM's 150-plus channels of commercial-free music and premier sports, talk, news, and entertainment programming with just one knob, and comes with a remote control so that other passengers can control the programming. The Xpress can be self-installed quickly and easily in the car or home.

BBC Radio 1 Launched on Sirius

NEW YORK — Sirius Satellite Radio launched on Aug. 10 BBC music channel Radio 1 in America during the channel's Chris Moyles Breakfast Show.

Sirius' broadcast of BBC Radio 1 will bring its subscribers their first opportunity to listen to the music channel from the UK.

BBC Radio 1 will provide Sirius subscribers with a cutting-edge mix of pop, rock, R&B and hip-hop music. Radio 1 is also internationally recognized for its support of up-and-coming British artists, its unique in-studio performances and interviews, its extensive coverage of the international music scene, and its engaging and informative hosts and entertainment information.

Telenor to Offer Inmarsat Satellite Service in Brazil

OSLO, Norway — Telenor Satellite Services has received approval from the Brazilian government to begin offering Inmarsat satellite services directly to service providers and their customers throughout Brazil.

The official announcement appeared in the Diário Oficial da União, the official government record publication of the Brazilian government on July 25, according to Telenor.

The negotiations process for the service began in 2002 with Inmarsat, Embratel, and the Brazilian government to authorize Telenor to sell directly to service providers and their customers in Brazil. Prior to the approval, Telenor Satellite Services was able to sell Inmarsat service in country only through state-sponsored service provider Embratel.

Tore Hilde, chief executive officer of Telenor Satellite Services, said Telenor can now offer its complete portfolio of 'on demand' Inmarsat satellite services to service providers in Brazil and their customers needing reliable communications on land, at sea, and while in flight.

Germany's Teles skyDSL Satellite Service Expands to the UK

BERLIN — Germany's broadband via satellite provider, Teles Wireless Broadband Internet GmbH, is expanding to the UK via its new subsidiary Teles skyDSL UK Ltd. based in Birmingham.

"The British market is attractive to us as satellite services already have a large established customer base," says Klaas Imgenberg, managing director of Teles Wireless Broadband Internet GmbH. "Hence we anticipate a particularly quick acceptance by the market of using broadband internet access via satellite."

skyDSL was developed by IT company Teles AG from Berlin. It has been successfully established in Germany with several ten thousands customers gained in the past years. Imgenberg said skyDSL is aimed at all British internet users.

MSV Introduces the MSAT-G2 Mobile Satellite Radio

DENVER — Mobile Satellite Ventures will unveil this month its new MSAT-G2 Mobile Satellite Radio. MSV said this new two-way radio was developed to address the increasing needs and demands of public safety and emergency response personnel, which include: interoperability with Land Mobile Radio systems; access to multiple agencies and talk groups; as well as GPS, which enables emergency management coordinators to know the exact location of their people.

Designed for the MSAT Network, the MSAT-G2 supports continent-wide satellite Push-to-Talk (PTT) Dispatch Radio and Circuit Switched Voice communications. SM

COVER STORY

European TV:

Glass Half Full, or Glass Half Empty?

By Chris Forrester

Harry Evans Sloan

"European broadcasting has never been in better shape." Or "It's a real challenge making any money". These two comments from senior suits at major European broadcasting companies sum up the current state of play. The "Glass half full" point-of-view has much merit behind it. In one recent mid-summer day (August 22) we had news that BSkyB had announced its first 6 high-def channels, on top of declaring record sales for its direct-to-home pay-TV offering, and that the company was preparing to buy back more of its stock and was even on the expansion trail.

On the same day Private Equity outfits Permira and Kohlberg Kravis Roberts agreed to buy Amsterdam-based SBS Broadcasting (not to be confused with SBS Comm's) for a thumping $2.1bn in cash, and making a nice return on investment for chairman Harry Evans Sloan and main backer Liberty Media (21.9%). Sloan, and CEO Markus Tellenbach stay on in executive positions. SBS is an absolute 'rags to riches' television story that we'll return to in a moment.

BSkyB's CEO is James Murdoch, and is now heir-apparent (if not Crown Prince) of Rupert's News Corp empire. However, he told journalists that he was in London at Sky for the long haul. "I fully intend to be here for the long term. I'm engaged by the business, the team and I are working hard on the business. That's my comment," he stressed.

In all fairness, rising son Murdoch delivered a robust and upbeat financial presentation, all-embracing in his vision and confidence of Sky's ability to hit 10m by the end of calendar year 2010. Some 18 months ago, while some newspapers were describing his performance as "fidgety", he announced Sky's "investing for growth" strategy, which now is paying

James Murdoch

dividends, he said. He argued that there's plenty of upside to come, including HDTV ("early 2006"), a neat wireless audio 'sender' gadget called "Gnome" (displayed sitting in a faux-garden setting complete with deck chair, sun parasol and opened bottle of beer), and stunningly good sales of its Sky+ PVR units (to 888,000 or 11% of its 7.8m subscriber base). "We'll pass 1m in a few weeks," Murdoch told his audience, highlighting the increased revenue position (up 11% to $7.5bn), much improved operating margin of 20% (profit before goodwill and exceptionals up 34% to $1.5bn) and profit after tax up 32% to $750m. He outlined that revenues from on-screen gambling will soon be the broadcaster's second-largest income stream (after subscriptions) beating wholesale and advertising income. He added that ARPU was up in Q4.

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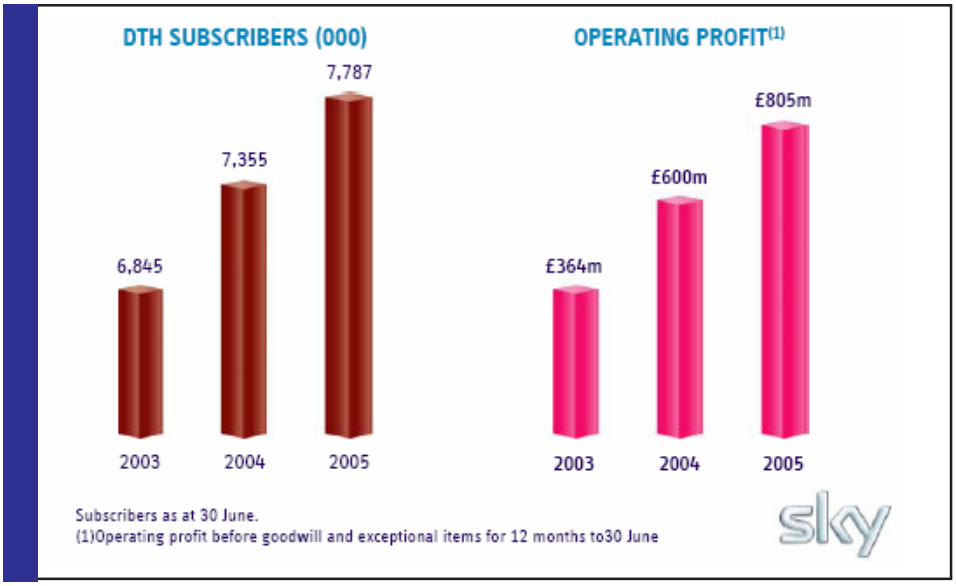

"We've never been stronger," he said, " and "the business is in tremendous health." Unsaid might have been his thought 'What more can I do?'

He's right. Since August 26 UK viewers have been able to sign up to BSkyB's high-def offering. Early orders were being taken at consumer electronics stores, even though Sky has not yet indicated its pricing structure for the first 6 channels announced. The channels themselves are hardly surprising. However, in some regards what Sky has left out of its initial announcement is perhaps more surprising than what's included.

Not present – yet - is either of the

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much-anticipated 'documentary services'. National Geographic's already confirmed (by Nat-Geo) high-def version is missing from the list. Nor is Discovery HD Theatre present, suggesting that Sky might wisely be keeping its powder dry for its Second Burst of marketing later this year. Sky says it is in "advanced discussions" with other channels interested in offering HF services on digital satellite, "which will be announced in the coming months".

Also answered on Aug 22 is the whole question of how BSkyB would treat its flagship channel, Sky One, where most of its American imports sit along with its own high-profile drama series like 'Hex', captured in high-def. Sky say there will be a simple "simulcast" of the standard and high-definition channels.

In other words, BSkyB will orchestrate its usual hype and promotion to the estimated 2m flat-panel owners already in the UK (out of a total TV universe of some 25m homes). Next year it will launch high-def and – in their view – reap the rewards for what James Murdoch promises to be "the most exciting thing to have happened to television – ever."

Other countries that are equally enthusiastic towards high-def are Germany (Premiere), most of the Scandinavian nations (Canal+) and France (Canal+ and TPS). Italy (Sky Italia) and Spain (Canal+) have yet to show their hand, but most expect announcements soon.

Indeed, most of these markets have not only buoyant pay-TV businesses in operation, but also a growing digital terrestrial multichannel market. While the UK's 'Freeview' offering now reaches well over 5m homes, it now has imitators just about everywhere. It's early days yet, and nobody has even got close to the UK's success, but that very success has generated plenty of digital terrestrial interest. 'Freeview' has even forced the struggling ITV Network to wake up and smell the coffee. ITV, the UK's primary commercial network, has been languishing in the doldrums. Advertising income is down, viewer ratings are suffering which further drains away precious ad-income. Last year, and some 17 years after BSkyB started, ITV launched its second channel in an attempt to win a greater slice of multichannel shelf-space. It has since launched a third, and in August promised it would launch its own Kids Channel (on top of the 20 or so kids service now available) and a channel for "men' currently dubbed ITV4. It has consistently missed the multichannel boat and only now is it playing an aggressive game of catch up.

The decision is not a moment too soon. ITV has drifted in 5 short years from being Britain's most important commercial channel with an audience market share that exceeded the BBC's, to today's share (in multichannel homes) of just 16.4%. That's still a big number, but the overall mix is helped by ITV2's 2.1% share, and ITV3's 1.2%. Neither is costing much to create being, by and large, channels that are full of repeats.

Just as a reality check, BSkyB's roster of channels, when combined, deliver a typical 8% share while the BBC's non-network channels (that is their new multichannel offerings), deliver a useful 4.1%. In other words ITV, thanks to its new-found policy, is already doing well.

It's much the same in mainland Europe, which takes us back to SBS Broadcasting and their recent takeover by Permira/KKR. SBS only started in Europe in 1990 by buying up a couple of struggling local TV stations in Scandinavia. Since then chairman Harry Sloan has turned a $25m initial investment into today's $2bn operation. It has expanded and now serves more than 100m viewers in 9 Western and Central European markets, and can now justifiably be described as Europe's second-largest

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European Digital Satellite Platforms

WESTERN EUROPE	Jun-05	Dec-04	Jun-04
Scandinavia			
Denmark Canal Digital	NA	127,000	NA
Finland Canal Digital	NA	54,000	NA
Norway Canal Digital	NA	712,000	NA
Sweden Canal Digital	NA	585,000	NA
Total Canal Digital	853,000	824,000	782,000
Viasat	519,000	475,000	436,000
France CanalSat	3,200,000	2,990,000	2,800,000
TPS	1,352,000	1,354,244	1,270,000
AB Sat	NA	65,000	NA
Germany Premiere	3,313,140	3,247,172	2,893,405
Italy Sky Italia	3,300,000	3,100,000	2,700,000
Netherlands Canal Digitaal	550,000	525,000	500,000
Portugal TV Cabo Sat	378,000	350,000	315,000
Spain Digital+	1,776,000	1,652,573	1,815,000
Turkey Digiturk	NA	868,000	NA
UK Sky Digital	7,787,000	7,609,000	7,355,000
Sky+	888,000	642,000	397,000
Multiroom	645,000	473,000	293,000
Ireland	363,000	347,000	332,000
EASTERN EUROPE			
Bulgaria Bulsatcom	NA	NA	NA
Hungary UPC Direct	150,000	140,400	121,800
Czech Republic UPC Direct	91,000	90,100	75,200
Poland Cyfrowy Polsat	500,000	450,000	400,000
Cyfra+	700,000	650,000	650,000
Romania FocusSat	NA	NA	NA
Digital TV Group	NA	NA	NA
Max TV	NA	NA	NA
Slovakia UPC Direct	15,000	14,600	12,200
Baltic Viasat	24,000	15,000	2,000

Source: ***Company Data/New Television Insider Research***

Skyâ•™s HDTV set-top Box

multichannel player. It either owns or controls 10 top-tier stations, in 7 markets, and has recently launched a clutch of music channels rivalling MTV. Revenue has grown steadily, from •510m in 2002, to almost •700m last year and its share price reflects that performance, and a reversal of the collapse of a few years ago when media stocks suffered during the dot-com fall out.

The buyout firms said they were attracted to SBS because of its growth potential. “The key point here being that central and eastern Europe and Scandinavia have above-average growth prospects compared to Europe,” said Gotz Mauser, a partner at Permira, noting the faster economic growth in those regions as they race to catch up with western Europe.

SBS has been quick to expand its reach to include multiple broadcasting outlets, including pay TV and interactive services over mobile phones and video on demand. The proceeds of the sale will be distributed to shareholders in November. They will receive about •46, or $56, per share, a 16% premium to where they were trading on Aug. 12 before a report first surfaced about a possible sale of the company.

Both SBS and the equity firms said they are not interested in breaking up the company and

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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

selling channels to local rivals, a route some analysts have suggested could fetch higher prices. “These stations work together,” said Harry Sloan, in an interview. “The more channels that we’re buying programming for from Hollywood, the more buying power we have, and the more opportunity there is to have the channels work together.” SBS once relied almost entirely on advertising revenue. It is now about two-thirds ad-based, and in five years, CEO Markus Tellenbach said it should be about half as the company branches into new pay-based services.

SBS is not alone. Germany’s ProSiebenSAT1 production unit SevenSenses has just applied to the regional media authorities in Berlin-Brandenburg for four pay-TV licences. The channels in question will be called Comedy-Kanal, Lifestyle, Current Movies and Classic Movies and initially distributed via the Kabel Deutschland digital platform. ProSiebenSAT1 plans to source revenues from a combination of traditional advertising, interactive value added services and carriage fees in order to finance the channels. The channels are part pf a diversification section headed by Marcus Englert, and according to industry sources the main aim is to strike a deal with Kabel Deutschland.

The overall strategy is meanwhile to increasingly diversify revenue and generate new income sources besides traditional TV advertising. Only 7% of ProSiebenSAT1’s turnover was not generated from advertising in 2004, and the company would like to double the figure by 2007/8.

This is the trend. Broadcasters are moving away from ad-supported ‘free to view’ television, and putting more emphasis on pay television. Nobody yet suggests the major networks are dying – yet. But they are having to re-invent their commercial models in order to survive.

SM

FEATURE

US Programmers: Still Franchising Via Satellite in Europe

by Daniel Freyer

With over 264[1] million TV homes, 75 million of which are cable and over 51 million satellite DTH homes, it is easy to understand why Europe has attracted so many American broadcasters to venture across the pond. To put this in context, the US has 73 million cable subscribers and just over 26 million satellite homes. In addition to the size of the market, Europe has the appetite – Europeans are huge consumers of US content and have an appreciation for American programming. Many American broadcasters who have successfully made the transatlantic hop with multiple European channels include Turner Networks, QVC, Bloomberg, Viacom's MTV, VH1 and Nickelodeon networks, Discovery Networks, Playboy, and Hallmark Channel to name a few. Furthermore, as the costs of channel uplink and satellite distribution have fallen with digital compression, the reduced barriers to entry have allowed many new networks to launch in Europe in recent years.

Open Skies and Local Skies

Unlike the US today, where a programmer needs to negotiate carriage with an EchoStar (11.5 million subscribers) or DIRECTV (14.7 million subscribers) in order to reach mainstream DTH viewers, in Europe it's possible for a new channel to simply lease uplink and satellite transmission services and directly access a substantial home viewer audience. But it's an audience spread across thirty countries, each with its unique viewer tastes, market and regulations. In addition, desirable satellite subscribers are aggregated in key countries on specific domestic DTH platforms, or "bouquets", like Sky (BSkyB) in the UK, Digital Plus in Spain, Sky Italia in Italy, France's TPS and Canal Plus, and so on.

Eutelsat's Hot Bird 1 satellite

Hot Birds

Top satellite options for Pan European signals are the Eutelsat Hot Bird fleet of co-located spacecraft at 13° East, and SES-Astra's Astra fleet co-located at 19.2° East and 28.2° East. Both orbital locations are geared to making it easy for millions of DTH antennas across Europe to receive hundreds of radio & TV channels via a single rooftop dish.

Hot Bird at 13° East and EuroBird 1 at 28.5° East reach 120 million homes across Europe, North Africa and the Middle East, boasting a community of over 1500 TV and 800 Radio channels. For Europe alone, around 1500 TV and radio services reached a measured audience of 68 million cable homes and 45 million DTH homes and more than 2 million hotel rooms for 2004, according to the company. Launching a new channel on this location offers access to 80% of cable and satellite homes in Western, Central and Eastern Europe, and 99% cable head-end penetration[2].

The Astra 19.2° East location combined with Astra (28.2° East location) offers an attractive reach of over 102.68 million European cable and satellite homes, or 82% penetration of that total market. It hits 76% of satellite homes and accesses 87% of cable subscribers.

A Who's Who of American brand channels can be found as digital primary distribution signals at these orbital locations. Numerous "primary" feed signals are used by these programmers to reach Europe's cable systems, as well as the broadcast centers of national DTH bouquets like Canal Satellite and TPS in France, Sky Italia, Digital Plus and others.

For instance, Turner Networks' CNN International is uplinked to Hot Bird-6 in a digital multiplex operated and uplinked from outside of London by GlobeCast. This particular GlobeCast multiplex service carries the major European news channels, including CNN International's Europe

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feed, BBC World and Euronews reaching virtually every cable headend in Europe. Bloomberg TV also uses Hot Bird-6, broadcasting a five-channel multiplex of channels for European cable and DTH platforms while Viacom renewed its contract earlier this year for uplink of all its European feeds on Hot Bird-6.

While they may be the best, Hot Bird at 13° East and Astra 19.2° East locations are not the only distribution options. For example, Viacom, Inc, distributes the UK MTV and VH1 channels for the Sky platform on its transponder on the Astra2A satellite at 28.2° East, also using a GlobeCast uplink from London. In addition, although Discovery Channel feeds to European cable markets from its playout facilities in the UK, its cable signals are uplinked by GlobeCast to the Sirius-1 spacecraft, which offered lower rates on transponders when it first launched.

DTH Platforms: The UK is First Port of Call

With no language barrier and strong cultural ties, it's perhaps not surprising that American TV fare has a strong foothold in the UK. How strong? In a recent sample of UK TV channels tracked by BARB for an August 2005 week, a substantial amount of non-BSkyB-owned channels were American brands(See Table 1). These "American"channels captured over 10% of total weekly viewing share, or the equivalent of 24% of the total cable and satellite-viewing share. As such, the UK's Sky DTH is a key distribution platform for many American-brand channels.

The UK market is somewhat straightforward in that there's a single provider of satellite DTH services – BSkyB. The Sky Digital bouquet reaches 7.7 million subscribers and BSkyB aims to raise this to 10 million by 2010. Many of the channels on the Sky platform also have carriage with the two UK cable operators

– NTL and Telewest – which have 4.5 million subscribers between them. In addition, there is one Digital Terrestrial Television operator – Freeview – which reaches 5 million homes. All channels on the Sky platform are digitally encrypted for reception only via Sky's set top receivers, including the Free-To-Air channels in Sky's basic package for subscribers. All of the major North American programmers in the UK are on the Sky platform.

Becoming part of the Sky bouquet doesn't mean that as a channel you need to buy satellite capacity and uplink from BSkyB. Programmers can choose from a number of UK-based satellite and uplink companies that offer digital services on the Astra 28.2° and Eurobird 28.5° East satellites.

The Astra 2A, 2B and 2D satellites co-located at 28.2° East formed the first satellite fleet used by Sky until four years ago when the new Eutelsat Eurobird satellite was co-located at the same orbital slot, providing more transponder capacity for new Sky channels — all receivable by the same DTH dishes. Transponder space on Astra at 28.2° degrees East had been very expensive but the launch of Eurobird opened the marketplace up by introducing competition, new space inventory and more affordable rates. Soon a large number of new channels run by smaller companies joined the Sky lineup.

However, being available on the satellite is useless if viewers can't find your channel. Broadcasters can arrange for a listing on the Sky Electronic Program Guide (EPG) as a separate transaction with BSkyB, even if they are not being uplinked by BSkyB. The Sky system provides an EPG listing for each channel, which is based on programming genre categories, e.g. general entertainment, sports, specialist etc. EPG listings are regulated by the government, as is the tariff for being listed. It runs at some £75,000 per year for Free-To-Air channels. Pay-Per-View channels pay more, plus £1.50 per subscriber. Pay channels can either use Sky's subscription management and consumer call center for authorizations, activations and billing, or they can outsource that function to other companies, who typically charge a per-subscriber monthly fee for the service.

Satellite service providers can assist a new programmer in managing or facilitating the technical arrangements for delivery of EPG materials to the BSkyB origination center.

For example, GlobeCast has been the contractor of choice for a number of channels in the Sky package to provide uplink and space segment. In order to include the EPG data in its uplink multiplex at the GlobeCast Brookman's Park Teleport, GlobeCast houses a Sky Adaptation Hub there that is remotely operated by BSkyB. This system outputs a video program stream with the EPG and subscription authorization information adapted to a single transport stream, which feeds GlobeCast's multiplex uplink

All broadcasters need a license from the relevant issuing authority, for example Ofcom in the UK and CSA in France.

Licensing Issues

Broadcasters now also need to comply with European industry regulations. In the current political climate, new European directives are compelling players in the broadcast arena to be more cautious of what is made available on their airwaves and authorities are more strenuously enforcing existing legislation. Most satellite operators will no longer carry a channel that is not licensed as they could now be subject to fines and could even be considered an accomplice or accessory to

Table no. 1

Selected American Channels in Europe
UK Satellite Channels

Animal Planet	Discovery Wings	Nick Junior
Bravo	Disney Channel	Nick Toons
Boomerang	Disney Playhouse	Nickelodeon
Cartoon Network	Disney Toons	Nick Toons
Biography Channel	E! Entertainment	Paramount Comedy
Bloomberg TV	Fox News	Paramount 2
CNBC	Fox Kids	Playboy TV
CNN International	Hallmark	QVC
Discovery Civilizations	History Channel	Sci Fi Channel
Discovery Health	MTV Classic	The Box
Discovery Home & Leisure	MTV Hits	The Golf Channel
Discovery Kids	MTV2	The Travel Channel
Discovery Science	MTV	Turner Classic Movies
Discovery Real Time	National Geographic	VH1, VH2, Classic
Discovery Travel & Adventure	Nickelodeon	

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a programmer's actions whose content was deemed illegal or criminal. Therefore, appropriate licenses must now be obtained to launch operations in Europe and broadcast service providers with expertise on regional legislation can help navigate this otherwise daunting and unfamiliar path.

The good news is that a license granted by any country within the European Union is valid for all the member countries, as well as all associated states and it is not necessary to apply for individual licenses in every country where the programming will be broadcast.

While they cannot provide legal counsel, some broadcast transmission service providers, like GlobeCast, can explain the rules and provide an outline of the steps that need to be taken to comply with current regulations – everything from where to apply, to submission procedures, to license renewals. In fact, legal counsel is rarely necessary at all as the regulatory authorities generally insist on having a relationship directly with the broadcasters and will often not enter into a discussion with a third party. Some local authorities have even taken measures to improve their user-friendliness for American companies by adding English-speaking staff.

Applying for a License

The application must either be submitted in the country where the broadcaster maintains its flagship European office (i.e. where decisions are made with regard to editorial content and where top regional management is based), or in the country where the satellite operator is registered. The four major satellite operators in Europe are Astra (Luxembourg); Eutelsat (France); Hispasat (Spain); and NSS (Netherlands).

In France, and a number of other countries, there is no fee for a license and where payment is required the cost is typically nominal. Information required for the application usually includes the applicant company's bylaws and a description of its content.

Since it can take up to two months for an application to be approved, it is wise to apply for a license in the early planning stages. Depending on the nature of the channel, the process can be faster but uplinking can not take place without a valid license.

Once the license is approved it is

is valid for a term of five years at the end of which an application for renewal must be submitted. Renewal is usually a rather swift process requiring no more than an updated programming schedule.

When in Roma….

Negotiation of local DTH carriage terms, fees, EPG placement and technical integration to meet the requirements of a specific DTH bouquet can be complex, time-consuming and perplexing for a US-based business with limited European presence. Programmers should look for in-Europe satellite transmission partners that offer in-country offices, with strong local contacts and experience to facilitate negotiations for distribution on specific DTH bouquets and platforms in the UK, Spain, Italy, France, Germany and elsewhere, depending on the programmer's target markets.

This edge gained by working with the right satellite service providers who offer experience, market connections and relationships can be a big benefit to your successful launch and distribution in Europe.

Setting up Shop

For American programmers considering European channel expansion, it's obviously critical to understand unique viewer tastes. What may work in the UK, without any language conversion, could be far from the mark in France. With transatlantic fiber rates between London or Paris, and New York or Los Angeles as low as domestic US cross-country rates, US-based networks can cost-effectively originate European feeds in the US and then deliver them via fiber to European uplinks. This is the case for instance with Los Angeles-based E! Entertainment, which sends two feeds to Europe. European interstitials, time-delays and spots can be inserted via remotely controlled or monitored automation systems. As the European revenue stream builds, increased local presence may be warranted.

AMERICAN SATELLITE CHANNELS IN EUROPE

SPAIN 19.2E Digital (Astra 1C/1E/1F/2C)	CZECH HUNGARY 19.2E UPC Direct (Astra 1E/1G)	GERMANY 19.2E Premier (Astra 1F/1H)	FRANCE 19.2E Canal Sat (Astra 1G/1H)	NETHERLANDS 19.2E Canal Digitaal Satelliet (Astra 1G/1H)	ITALY 13.0E Sky Italia (Hot Bird 1/2/3/4)	 13.0E Cyfra+ Poland (Hot Bird 1/4)
Bloomberg	Animal Planet	Animal Planet	MTV	Animal Planet	Animal Planet	Animal Planet
CNN	Bloomberg	Discovery	Bloomberg	Cartoon Network	Bloomberg	Cartoon Network
Discovery	Cartoon Network	Disney	Cartoon Network	Discovery	Cartoon Network	Cinemax
Disney	Discovery	MGM	Discovery	Hallmark	Class CNBC	CNBC
Fox	ESPN Classic		Disney	MTV Base	CNBC	CNN
Fox News	Hallmark		E!	MTV Hits	CNN	Discovery
History Channel	HBO		MTV Base	MTV2	Discovery	Discovery Civilisation
MTV	HBO2		MTV Hits	National Geographic	Discovery Civilisation	Discovery Science
National Geographic	MTV Base		MTV2	Nickelodeon	Discovery Science	Discovery Travel & Living
Nickelodeon	MTV Hits		NBA+	TMC	Discovery Travel and Living	Hallmark
Paramount Comedy	MTV2		Playboy TV	VH1	Disney	HBO
Playboy TV	National Geographic		Playhouse Disney	VH1 Classic	E!	HBO2
Playhouse Disney	TCM		TCM		ESPN Classic	MTV
TCM	VH1		TMC		Fox	MTV Classic
Toon Disney	VH1 Classic		Toon Disney		Fox Life	National Geographic
VH1			VH1		Fox News	TCM
					Hallmark	
					History	
					MTV	
					MTV Brand New	
					MTV Hits	
					National Geographic	
					Nickelodeon	
					Paramount Comedy	
					Toon Disney	

Source: Lyngsat.com

Control Room monitoring satellite packages over Europe with American Programming
(Photo Courtesy of GlobeCast)

Customizing Feeds with Advanced Content Management

Using the latest in ingest, file storage, technologies, programmers can now even remotely control their playlist management, reducing the technical cost of creating new channels "in-country". For example, GlobeCast has introduced it's Store & Broadcast Content Management Delivery System which allows international channels to distribute multiple program streams with separate language tracks and subtitling without the cost of creating and delivering six separate linear feeds. This new kind of service allows the programmer to control transmission parameters, cue tones, associated subtitling, animated and fixed logos, as well as audio streams, The result is a central platform that reduces the cost, logistics and infrastructure associated with more traditional tape-based origination solutions.

The UK has been a popular place for Americans to base initial European operations, with no language barriers, good infrastructure and a competitive market for satellite, uplink and playout facilities readily available in or around London. For example, Middle East Pay-TV operator Showtime has selected GlobeCast to deliver a bouquet of 12 leading Western television channels via London to the DTH provider's digital platform on Nilesat 102 covering the Middle East and North Africa. Bloomberg decided to operate its own playout and origination facilities in England, where it creates unique channels for France, Italy, Germany and of course the UK. Bloomberg's playout is fed to the GlobeCast uplink in London. Viacom uplinks its MTV networks from just outside London, as do Discovery and Turner networks. Turner launched a French language version of children's channel Boomerang on the French TPS package but, given its existing UK operations, elected to originate the signal in the UK, relying on GlobeCast to fiber the signal to Paris for uplink to its joint platform with TPS on Hot Bird.

Obviously there are exceptions to locating in the UK, whether for regulatory, programming-specific or other business reasons. A case in point is religious programmer Trinity Broadcasting Network (TBN). For the Iberian market, TBN has a feed on the Spanish DTH platform uplinked from GlobeCast in Spain to a Hispasat spacecraft multiplex. Meanwhile, TBN relies on GlobeCast to uplink its Sky Digital signal for the UK on Eurobird. GlobeCast also operates a digital multiplex for TBN on Hot Bird for European distribution of six channels.

Regardless of where operations are based, Europe offers opportunities – not only for subscription and pay channel distribution but also in emerging revenue opportunities like interactive services. Although satellite distribution and technical infrastructure decisions do play a part in a channel's success, programming to meet the needs of specific European viewer and market segments is obviously the critical success factor. To help focus your resources on programming and marketing, American programmers planning European channels can look for satellite service providers who offer proven technical expertise, "one-stop-shopping" for prime European and international satellite and uplink and fiber facilities, and service quality track records. In-country contacts and expertise, and the ability to help gain DTH platform carriage in Europe should be offered and available. Customer service in both the US and Europe, an understanding of both the European environment and your business "Stateside", and facilities and assets to link the two should be the standard you expect in satellite service providers to help make your channel a success. SM

Notes:
[1] Eutelsat market study source
[2]www.eutelsat.com/news/media_library/brochures/Facts_&Figures.pdf
[3]:based on data from SES-Astra website. www.ses-astra.com/corporate/market-research/covmarket.shtml

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FEATURE

Integrated Digital TV and the Digital Home

By Laurent Jabiol

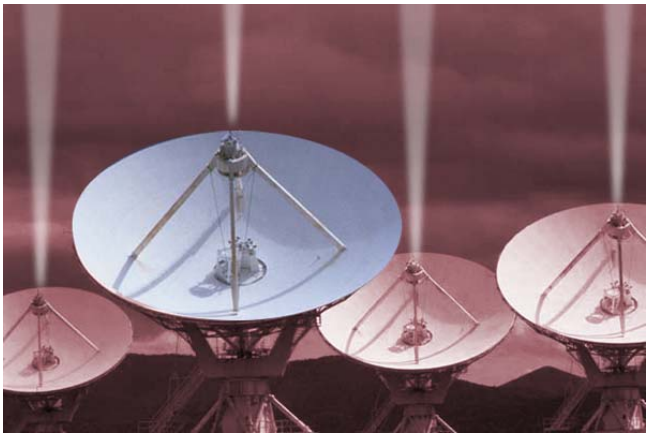
For the first time on a global scale the digital home is becoming a reality. Consumers are experiencing the wide diffusion of Internet appliances, as well as domestic multimedia peripherals (typically digital camcorders, cameras and music players such as the iPOD™). As the TV ecosystem switches towards the digital age, this combination sets the foundation for the upcoming PC-TV convergence. In addition to this global trend, this year TV over IP will grow to the maturity stage, thus preparing the groundwork for massive deployment.

First we will highlight the main advantages of the integrated digital TV sets. With more than one million units already in use in Great Britain, of which half of them were sold at the end of 2004, the innovative concept of Integrated Digital TV (iDTV) follows a growing public interest in the technology.

Sony just announced that all TV's bigger than 26 inches, will be digital. Moreover, because it is also capable to receive the analog over-the-air channels in parallel, iDTV makes it possible for people to be equipped digitally, even if they are not located in a covered DTT (digital terrestrial television) zone, or regardless if they use ad-hoc antenna installation. Everyone who purchases a CRT (Cathode Ray Tube) set or a flat television panel over 26" will be ready for the future without any concern, therefore contributing to the necessary collective effort of digitalization.

Sony's iDTV system

Governments have recognized for some time that, as a true vector of digitalization, the integrated digital television sets must systematically be equipped with an interface making it possible to simply add a module for seamless conditional access scalability (European Directive 2002-22-CE and the US' FCC ruling known as the "plug-n-play rule"). By far the least expensive solution to finance, physically distribute and support for a Pay TV operator, the module is the most suitable solution. Europe and the United States are both strongly promoting the production and use of iDTV sets.



Europe

Looking specifically at Europe, where Digital Terrestrial Television (DTT) is widespread, the digital revolution is spreading quickly and will soon reach the entire European population. Currently, in many countries, most households still access television through their over-the-air antennas.

The rapidity of the DTT success directly depends on the ability of the various European Union states to satisfy the European objective demanding to end analog broadcasts, and subsequently, the possibility of releasing an additional spectrum resource, also called "digital dividend", to satisfy new needs and uses (generalization of high definition, mobility, etc).

Considering other factors prone to accelerate the success and the deployment of the DTT, we can say that beside the quality of the programs and offerings, quick acceptance depends more in the

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Neotion's MPEG-4 WiFi IP Input Module

capacity of households to equip themselves with the adequate terrestrial digital receivers. Most governments, even the French one, have chosen the MPEG-2 format for the free-to-air channels which are, and will remain, the main selling point of DTT. This decision has allowed consumer electronics manufacturers to propose reception equipments at extremely low prices, based on proven technologies already mature, amortized, and massively available worldwide.

Even if a DTT adapter cost • 50 (approx. US$ 40.00) and even less in the future, it is not the most appropriate solution to drive the nations towards a true digital home convergence.

Regardless of its name, DCR (Digital Cable Ready) in North America, or iDTV (integrated digital TV) in Europe and Asia, integrating a basic digital tuner into new television sets is a move in the right direction.

The incremental charge, about • 5 to 10 (US$ 4-8) on average, is clearly economical in comparison with the huge added value. Reinforcing this position, it's important to note that more than 12% of television sets are replaced yearly, representing about 6 million units in the UK alone or almost the same number as in France.

The US

In the United States, where the aspiration to evolve from analogue to digital is extremely strong, the government uses a voluntary approach. The switch from analog to digital is happening very fast and DCR TV sets are experiencing a skyrocketing nationwide consumer demand According to the Consumer Electronics Association, in a recent study dated April 2005, 70% of the US consumers are planning to purchase a DCR as their next TV set.

Furthermore, the Federal Communications Commission (FCC) has adopted rules (September 2003 FCC plug-n-play rule) to ensure that all DCR TV's have a standardized CableCard slot. On June 9, 2005, the FCC decided to move forward the deadline to March 1, 2006 for all 24- to 36-inch televisions to be manufactured with digital tuners. In addition to this strong push, the FCC decided that all TVs from 13 inches and above, as well as DVD burners and other devices receiving a TV signal, must be digital (and therefore CableCard compliant) pushing up the deadline up to December 31, 2006 instead of mid-2007.

The FCC actions are helping to speed up the consumer migration towards Digital TV, and create a tremendous opportunity for CableCard peripherals, not only conditional access modules, but for a range of input modules. To illustrate this trend, the innovative IP input modules from Neotion received the "Pick Hit 2005" prize at NAB 2005. The standardized slots, named CI in Europe and CableCard in the US, offer a great opportunity for consumer electronics manufacturers to propose a wide range of low cost input modules, thus enabling consumers to easily access the booming emergence of IP based TV and interactive services. Therefore it can be considered as the ultimate DTV hub in the consumer perspective beyond a conditional access upgrade.

Thanks primarily to the wireless input module (WiFi), specifically the ones which can perform simultaneoulsy MPEG-4 transcoding capabilities for legacy TV sets and receivers, we foresee, among many more, a mix of opportunities, such as:

- The ability to enable Blog On TV (Akimbo is already moving in that direction).
- The ability to become MPEG-4 compliant (advanced codec is paramount for IP based communications in Unicast and local wireless networks).
- The ability to comply with specific IP initiatives such as Yahoo Home Digital. Actually, the vision of getting Yahoo interactive content onto the TV set - thus enabling the true Convergence of old and new media though the emerging base of hybrid digital receivers - makes perfect sense for us.
- The ability to open up the quadruple play convergence (the domestic PC becomes a true TV server).
- The ability to create a strong push for B2B and eLearning TV initiatives.

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At the annual IBC show in Amsterdam this month, US broadcasters will certainly be looking at how they can increase their share in the lucrative European market.

- The ability for the TV manufacturer to build a genuine and captive walled garden set of applications to bring more value and stickiness to the DCR & iDTV mainstream product itself (e.g.: pulling of games, EPG, news headlines, etc…). Also, an unlimited number of interactive applications (MHP, MHEG-5, OCAP) could be ready for being pulled, rather than coming from any broadcast carrousel, from the IP world.

In this process, Neotion is aiming at being one of the best technology innovators & leaders in the global digital TV market. The company designs, develops and markets a whole range of products and services such as consumer plug-n-play DTV modules and technologies for set-top boxes. Its range of products and services are powered by a set of in-house design silicon (SoC). Today, with the coming introduction of its MPEG-4 breakthrough chip – the Neotion processor 4 - the company offers a unique combination of advanced codec transcoding and IP hybrid support to any legacy digital TV set.

Conclusion

Among many breakthrough evolutions that happened during the course of the twentieth century, everybody would agree that television has been playing - and will continue to do so - a central role in people's entertainment habits.

Wherever one goes in the planet, whatever the stage of development of the region, the magic and the impact of television on the masses is always significant.

After color TV in the late sixties, Digital Television has definitely proven to be another revolution in the industry. However, digital quality and extended line up of channels with the most interesting programs have been primarily monitored through a vertical market created by the Pay TV operators. Deployments of digital receivers have therefore been essentially executed as per the plans, and under the strict control of the numerous Pay TV operators. Then, after a decade of multiple digital Pay TV platform development, the 80-20 rule still dominates, as the digital era does not reach the majority of the population yet.

Along with the analog switch-off that proceeds from a political decision in the US, Europe and Asia, digital quality and increased number of channels will eventually be freely and easily accessible to 100% of the population. Therefore, all the TV sets, which people will keep on buying in great volumes (20 millions sell-through in the US each year), will become de facto digital (ie. iDTV & DCR). Therefore, Pay TV operators won't be the only ones to define the generic digital receiver anymore, and everyone will be able to buy equipment that fits their specific needs.

Furthermore, the Digital Home is becoming as well a reality, thus people naturally seek for ways to make it simpler (preferably via wireless connections) and interconnect their home digital appliances such as TV, PC, broadband connection, camcorder, HiFi system and so on.

That is where Neotion's module based transcoding technology comes in the loop, through a compelling range of plug-n-play TV cards that will turn integrated digital legacy TV sets into hybrid and MPEG-4 capable equipments. Subsequently it will reinforce the original digital TV set as the most legitimate Digital Home central Hub, while opening it towards the booming quadruple play ecosystem, and, thanks to the IP and MPEG-4 capabilities, naturally puts it at the epicenter of an emerging multichannel universe. SM

Laurent Jabiol, Deputy General Secretary and co-founder of NEOTION, has more than 15 years of experience in Laurent Jabiol is managing director and co-founder of Neotion a provider of solutions enabling manufacturers to integrate MPEG-4 technology into their products. He can be reached at mpeg4@neotion.com

CASE STUDY

A Unique Satellite System Aces Its Demonstration Tests

by Cor Westerhoff

Delivering more than promised is a worthy sales goal for any com pany. For XTAR, LLC, a new satellite communications company with big ambitions, recent tests of its newly launched satellite far exceeded performance objectives and validated the confidence of its two partners in this exciting new satellite business.

XTAR is a joint venture between Loral Space & Communications and HISDESAT. XTAR's first X-band satellite, XTAR-EUR, was lofted into its 29^0 west orbital location on an Ariane rocket in February and entered service in April. XTAR is designed to offset the increasing bandwidth shortfall and provide cost-effective commercial augmentation of existing X-band satellites for military and government agencies.

Before XTAR-EUR had even reached its final orbital position, initial testing of the spacecraft and the payload had already begun. "The first six weeks in the life of a satellite is our busiest time," explains John Brown, Vice President of Satellite and Program Management, Loral Skynet, which is providing XTAR with technical support and assistance. "Once the satellite reaches its correct orbital location, each day we spend testing delays the satellite's service. For that reason we operate around the clock, seven days a week during in-orbit testing," he noted.

By early April, XTAR-EUR was ready for service. Its first customer, the Spanish Ministry of Defense, accepted service immediately upon the conclusion of the in-orbit testing. In May, XTAR was awarded a multi-year contract to provide diplomatic communications services for the U.S. Department of State.

During April, XTAR conducted the first performance demonstration of the satellite. Supported by members of the U.S. Army's 7th Signal Brigade, 5th Signal Command in Mannheim, Germany, the objective was to demonstrate how a standard U.S. Army ground terminal, operated by active duty soldiers, could place a modulated carrier on XTAR-EUR. Employing existing terminals that clearly had seen considerable use under rough conditions, this test allowed a rank and file military satellite terminal operator to run carriers to the satellite under normal operating circumstances.

The tests achieved major data rate milestones, surprising even those who had been involved in the design and construction of the satellite. Told by one government participant that, "achieving 20 Mbps would be really something," within hours of setting up for this initial demonstration, XTAR demonstrated in excess of 100 Mbps using less than 9% of the operating transponder power.

"Even though you know the satellite's capabilities theoretically and through ground testing, it's always gratifying to see them demonstrated and even exceeded," explained XTAR's Gary Chesney, Director, Products and Services. Chesney was onsite with day-to-day program responsibility for the Mannheim demonstration. "What makes this first demonstration so gratifying is that we did it on real, operational U.S. Army hardware," he said. "All the ground and orbital testing using sophisticated test equipment doesn't mean much until you see it

Satellite Antenna	Modulation	Antenna	Transmitter Power	Transponder Power in % (2 dB OBO)	Data Rate Mbps
Spot Beam	16 QAM7/8	LH GXA 16'	20 W	<9	>100
Spot Beam	16 QAM3/4	AS-3036 8'	370 W	<21	>75

XTAR-EUR Demonstration Results – Mannheim, Germany, April 2005

CASE STUDY

working on a real terminal, preferably one with olive drab paint and a lot of wear".

In the case of the Mannheim demonstration that's exactly what happened. The terminal was at least 25 years old and clearly had seen many deployments to some very harsh areas. Nevertheless it quickly locked on to XTAR-EUR and began a series of test routines. The terminal was a TSC-85C connected first to an LHGXA 16-foot antenna and then to an AS-3036 8-foot antenna. The results of this demonstration are summarized in the following table.

The high data rates achieved during the Mannheim demonstration were made possible by changing to a modem manufactured by Advantech. Harris Corporation and L3 Communications also contributed by slightly modifying their antenna feeds to allow operation in both circular polarizations by a simple turn of the feed. This enabled the terminal to instantly double the amount of capacity it could access on the XTAR-EUR satellite.

No one on the XTAR team ever doubted the performance of XTAR-EUR. But seeing it deliver such remarkable throughput on a battle-scarred old mobile terminal was worth a thousand Power Point charts.

Building on the success of the demonstration with the U.S. Army, the next XTAR-EUR test was organized and conducted through the auspices of the 1st Combat Communications Squadron of the U.S. Air Force at Ramstein Airbase, Germany. This demonstration was considerably more complex, and included multiple terminals operating in both Germany and England while being monitored by ground stations in Madrid and the Canary Islands.

As with the Army at Mannheim, the purpose of the Ramstein test was to display for the USAF a full range of high data rates in both left hand and right hand polarization. An additional objective was to demonstrate a number of unique U.S. military services to conclusively prove the compatibility of XTAR-EUR with U.S. Department of Defense systems. Again, the results exceeded XTAR's highest expectations.

Two USC-60A terminals connected to 2.4-meter (~ 8 foot) antennas were used for the Air Force demonstration. Substituting an Advantech modem to allow higher data rates, two

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simultaneous carriers of 75 Mbps were transmitted between the USC-60's for a total of 150 Mbps.

Weather played an unexpected role in the successful validation of XTAR-EUR at Ramstein. The satellite continued transmitting in high power without interruption through one of the fiercest thunderstorms the region had seen in years. The storm lasted several hours, causing significant local flooding.

Over four days of intense testing the USAF personnel ably demonstrated their ability to link to the XTAR-EUR satellite under a variety of conditions. One participant quipped that he didn't think XTAR could have achieved greater validation "without moving to the sands of Iraq".

That is just what XTAR has in mind for the next series of demonstration of this unique, dedicated X-band service.

Operating on XTAR-EUR

In addition to displaying XTAR-EUR's superlative throughput capacity, both tests also demonstrated the satellite's full compatibility with IP-based communications. Utilizing a modem provide by iDirect Technologies, the test established that XTAR IP transmissions are backward compatible with existing defense X-band terminals. Better still, all indications point toward the satellite being fully compatible with new and developing architectures for decades to come.

In summary, while demonstrating to the DoD the exceptional capabilities of XTAR's commercially available X-band satellite services, the Mannheim and Ramstein tests also validated the viability of XTAR-EUR to the major terminal manufacturers. Furthermore, the tests successfully established IP-compatibility, as well as the facility to use higher level coding techniques, like 16QAM, on a satellite at acceptable bit error rates. And the tests proved that existing tactical terminals can double their operating spectrum with only minor COTS modifications.

Now that's delivering more than promised. SM

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VIEWPOINT

Data Communications through Satellites – Opportunities for VSATs

by Bruce Elbert
President, Application Technology Strategy, Inc.

Introduction

With all of the fiber-optic cables and terrestrial wireless systems now fielded, it's hard to imagine that geostationary satellites would offer growth opportunities in the data communications field. But, this is exactly the case in growing economies in the developed and developing world. As I have stated in the recent past, very small aperture terminal (VSAT) networks now exploit broadband Internet capabilities which provide alternatives to common terrestrial solutions like cable modems and DSL. What makes the VSAT pivotal in many situations is that it is not constrained to locations with the requisite cable TV or telephone infrastructure. Likewise, users of VSATs don't have to wait for wireless operators to build out 2.5G and 3G infrastructure beyond the current limited footprint in a few major cities.

In this article, I take this thesis further so that readers may come away with a cohesive picture. First, we need to define the markets where satellite data communications is a viable competitor to terrestrial infrastructure (in many cases, it is a matter of properly blending the two). From here, we review the leading-edge VSAT technologies and who provides them, including some examples of complete solutions involving VSATs. I wrap up with a discussion of challenges the industry is now addressing.

Lyman's Bros. Mobile trailer-mounted VSAT for emergency services)

Demands of the Market

It wasn't that long ago that data communications was dominated by IBM's proprietary mainframe systems, along with packet switched services based on the X.25 protocol and pockets of distributed systems such as Digital Equipment Corporation's DECnet. Teleprocessing services through service bureaus and computer timesharing services also demonstrated that you didn't have to own the mainframes and servers needed to perform the computation and data storage functions.

As we all know, the Internet Protocol (IP) changed everything and the World Wide Web is more than a researcher's tool. Literally every company, government and a high percentage of individuals have immediate on-line access to an every-expanding array of services, information and interpersonal communications options. Having outgrown dial-up connectivity, users at all levels want and often can justify broadband access and backbone data communications based on IP. Add to this the new millions of telephone subscribers who have moved to VoIP services through an available broadband connection.

On July 7th, 2005, the FCC published data on high speed services for Internet access in the US. It provides, in part, "During the year 2004, high-speed lines serving residential, small business, larger business, and other subscribers increased by 34%, to 37.9 million lines. The increase was 17% during the second half of 2004, from 32.5 million to 37.9 million lines, compared to a 15% increase, from 28.2 million to 32.5 million lines, during the first half of the year." Extending at a rate of only 10% to July, 2005, produces a total of over 41 million high-speed lines. This is an astounding result when you consider that these are premium services compared to low-cost dial-up Internet access, which arguably could do the basic job for most people. In terms of geographic coverage, the FCC adds, "At the end of 2004, the service providers that report to the Commission had at least one high-speed service subscriber in 95% of the nation's zip codes. Our analysis indicates that 99% of the country's population lives in these zip codes."

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Swe-Dish' IPT Suitcase

Those who want and need high-speed Internet services want it now and they want it available wherever they are. This is clearly the domain of wireless Internet; but, wireless operators are not able to satisfy the same kind of cross section as do those that own land-lines. This is because it is exceedingly complex, expensive and time-consuming to implement and extend high-speed IP services in the same manner as narrow-band voice services that are currently available almost anywhere people go.

Where We Stand Technically

VSATs have tremendous opportunities, provided they do the job with technical superiority and at a reasonable price. The technical performance of the current VSAT is, by any measure, excellent. No longer are applications constrained to the equivalent of a low-speed dial-up modem; rather, the baseline is broadband at megabit-per-second speeds. The underlying technologies that facilitate this include: DSP chips and software that implement the most sophisticated modulation and forward error correction schemes in commercial practice; solid-state power amplifiers at Ku and Ka band that are both affordable and reliable; multiple-access schemes based primarily on TDMA with enhanced dynamic bandwidth control and mode-switching to match what users are actually doing at any particular time; better encryption security; and features for assigning priorities based on Quality-of-Service (QoS) objectives. Most VSAT

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-Hughes's DW 7700 series satellite routers

systems employ the star architecture to simplify VSAT design and allow for multi-cast capabilities; this allows remote sites to access central resources and the global Internet with relative ease and near-transparency. Mesh networks, which permit direct remote VSAT-to-remote VSAT connections, have not caught on particularly well, although there are applications (e.g., video conferencing) that need the low-latency point-to-point connection that the mesh affords. Importantly, a license or technical training to use a VSAT is no longer needed as it is as easy to operate as a cable modem.

The current offerings from leading manufacturers of VSATs all incorporate these desirable attributes, but differ in terms of specific capabilities and price-points. As I have said in the past, one needs to understand their requirements in order to evaluate and select from more than five different approaches. It is possible to sub-divide the field of star-based approaches according to the following five broad categories:

1. Consumer access to the Internet
2. Private (enterprise) networks
3. Leased-line (SCPC) replacement
4. Digital content distribution
5. Mobile communications

Each of these approaches places different demands on the technical architecture of the VSAT, and consequently there are physical and electrical differences among them. The price of the associated equipment and satellite capacity likewise varies, more or less in concert with the value that the particular approach brings to the particular user segment.

I believe it is possible to associate currently-available VSAT products with one or more of the five segments identified above. Please view these as suggestions and not endorsements. There is, after all, no substitute for doing your own due-diligence on the companies and products to assure yourself that the approach is a fit.

Consumer Internet access demands simplicity, performance and low price. Of the current offerings, I suggest that the new DirecWay series of VSATs from Hughes Network Systems is a worthy example. DirecWay has evolved over the years, benefiting from the Hughes position of leadership in market share and experience. I would also like to point out that ViaSat has begun delivering the SurfBeam VSAT for the WildBlue broadband service in the US. Surfbeam will give us a good "taste-test" for cable-modem service in the sky.

From a private network perspective, I have observed that very capable VSAT systems are available from several companies that have adopted the DVB-RCS standard. Included here are, again, ViaSat with LinkStar, EMS and Nera. I will address the issue of standards and inter-operability (for multi-vendor networks) later in this artlcle. In addition the DVB-RCS "family", it is also important to give mention to the Hughes DW 7700 series just announced (reviewed in a case study and the conclusion, below). Private networks from Gilat, featuring good service at reasonable cost, are popping up like mushrooms around Africa and South America, a testimony to Gilat's resolve to address a here-to-fore ignored market.

This brings us to venerable role of point-to-point links over satellite, used for private lines for Frame Relay, telephone trunks and to tie remote Internet service providers to the global backbone. Single-channel per carrier (SCPC) links, which are permanently assigned, have been a reliable means of accomplishing the result, but they are costly in terms of satellite bandwidth costs which are fixed per month regardless of usage. This is where the broadband VSAT products from iDirect have taken root. The fact that iDirect has seen explosive growth in their sales in the last few years is a testimony to how well engineered this product is. They have received industry awards from the World Teleport Association, SSPI, and recently at the ISCe Conference.

Addressing content distribution, this is generally a one-way multi-cast proposition using the DVB-S standard along with content authoring and management servers and software. Two companies stand out, in my view – Skystream Networks and Sony. Skystream pioneered the advance IP encapsulator and Edge Router to provide the point-to-point means of pushing the content from hub to remote site. On top of this, they offer a software system called zBand that allows efficient scheduling of content delivery and assures that all files and data get where they are supposed to. Sony provided their plasma displays and a specialized multimedia player that integrates real-time video with files and information delivered by zBand.

In the mobile arena, VSATs play a vital role of giving high speed access in what was previously a very low speed

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world. Examples abound in news gathering, disaster recovery, military special operations, and specialty markets such as oil and gas and construction management. A single-suitcase VSAT such as the Swe-Dish IPT and the SwiftLink DVM-100 from TeleCommunication Systems provide the unique ability to get broadband service on the air at Ku-band in just a few minutes. One cannot help but marvel at how Boeing put this capability into commercial jetliners, employing their own electrically-steered phased arrays and spread spectrum VSAT equipment from ViaSat. Companies like Stratos Global and CapRock have put these systems together to go on ships and drilling rigs, making it possible to deliver two-way broadband services on the oceans.

Examples of Cutting-edge VSAT Solutions

All of these technologies and services give the user and application developer effective tools in small packages. I will now offer some recent examples of how these tools play in the data communications world.

FamilyMart. The third-largest convenience store chain in Japan has opened up operations in California. Under the Famima!! brand, Famima Corp has placed its first new lifestyle specialty all-in-one community store (Premium Grocer + Quick Service Restaurant + Convenience Store) on the corner of Santa Monica and La Cienega Boulevards in West Hollywood. To meet their tight schedule for an opening on July 20th, 2005, Famima chose VSAT data communications to integrate all of their business services and to support an Internet café with wireless access. Working with JSAT International Inc., the US subsidiary of JSAT Corporation of Japan, Famima successfully brought up its first VSAT link in only one day. Supplied by Hughes Network Systems, the newly-introduced DW 7700 VSAT did its job with ample capacity and simplicity. Store operations that use the VSAT include credit authorization and point of sale, store inventory, accounting and Internet billing. Rollout of additional stores from here will be a piece of cake from a communications and data processing standpoint. Working with Fujitsu Consulting, the IT systems integrator for Family Mart, JSAT provided the most appropriate VSAT solution along with ISP services for the Internet Café.

Safeway. Digital content distribution networks via satellite are still a small niche in the overall VSAT market. Many companies have been evaluating what, exactly, a digital CDN can accomplish for a grocery chain, bank or gas station. Safeway Stores was one of the first large retail enterprises to experiment with CDM technology. Growing out of a private broadcast and training network, their evaluation of CDN technology and business models included a live video network produced by ABC Television. This innovative system that I viewed in a Safeway

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store in San Jose, California, looked and sounded like something you would watch at home. The difference was that it focused on Safeway and the products available in the store I visited. The elements used in this network consisted primarily of what I described above from SkyStream and Sony.

Forest Service. During critical situations, particularly with forest fires, the United States Forest Service has immediate communications needs. With base camps frequently being located as close to the incident as possible, land lines for voice and data use are not easily accessible. Lyman Bros., Inc., approached the Forest Service about the possibility of satellite data communications as a way of getting voice, fax and data services to the base camp to help incident management teams. This was accomplished by bringing in a VSAT terminal to the incident and running various voice and data lines throughout the base camp for phone and fax communication. Currently, Lyman Bros. uses a trailer mounted VSAT using iDirect technology to offer VoIP and broadband data services to forest fires throughout the West, continuing to meet the Forest Service's communications needs.

These examples demonstrate many of the features and technologies I discussed previously. Putting the pieces together involves a little creativity and knowledge. However, the fact that the tools are ready and affordable makes this a unique age of opportunity for VSATs.

Challenges, Not Roadblocks, to Continued Development

I feel it appropriate to round out this article by reviewing some challenges the industry and users face as VSATs attempt to gain prominence. I recently accepted the position of chairman of the Technology Working Group of the Global VSAT Forum. The charter of the TWG is to follow two areas of both challenge and opportunity – gaining and protecting satellite spectrum and assessing technical standards that could be a positive force for adoption of VSAT solutions. I will briefly describe each.

The question of assuring adequate frequency spectrum naturally involves the ITU World Radio Conferences (WRCs), where the trend toward higher satellite frequencies, smaller aperture antennas, a more congested orbital arc, and advocacy for frequency-sharing regimes (adding terrestrial services in heretofore satellite-only spectrum) has dramatically heightened the need for a unified industry voice. Some smaller ITU members may not now see much value in protecting satellite frequencies while others are being encouraged by terrestrial interests to allow new sharing rules for satellite spectrum. Countries most in need of data communications solutions would be ill advised to sell their satellite birthright for empty promises.

It will come as no surprise that the theme of the most recent GVF Summit – proprietary and interoperable systems - continues to be an increasingly important subject for the industry worldwide. The DVB-RCS standard is now *fait accompli*, and hardware is selling at a fairly brisk pace. Likewise, Hughes Network Systems introduced a standard called IPoS to gain acceptance for their systems in the same context as DVB-RCS. The value of these standards could be in making VSATs more generic and less dependent on the performance of a single supplier. Consider, however, that some regulators in Latin America have been discussing the possibility of enacting national legislation that would require project bids involving satellite earth stations to demonstrate that they are interoperable. In addition to such techno-political considerations, the GVF will produce a technology summit, titled, "Today's Technology and Standards" to examine approaches that have enabled service providers to respond to the needs of their customers in an effective manner.

Anyone who has followed our industry for a few decades knows that challenges have come and with it the necessary innovation and action to move us ahead. The new TWG will be meeting for the first time in September at the IBC convention in Amsterdam where members are invited to help shape this agenda and contribute to its success. There are obviously other venues and groups who likewise want to see progress made. So, consider both the aforementioned capabilities of VSATs for data communications and the efforts needed to ensure that this future can be reached sooner rather than later. SM

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

EXECUTIVE SPOTLIGHT

Interview with GlobeCast Chairman and CEO Christian Pinon

During a visit to Europe this summer, SatMagazine *Managing Editor Virgil Labrador* visited GlobeCast's facilities, particularly the teleport in Spain, which is a joint-venture with a production company, MediaPro, and had a chance to speak with its leading executives. One these exchanges was with GlobeCast worldwide Chairman and CEO Christian Pinon. Pinon candidly spoke about the European market as it relates to GlobeCast's global operations and new opportunities in other markets. Excerpts of the interview:

Q. *Give us a brief overview of the Europe market as it relates to your global business?*

A. Our home base is Europe and our revenue out of Europe is close to 80 percent of our global revenues. This is good from the point of view of having a stronghold in Europe but is probably not good for us in the long-term because as a global operator, sometimes we have more presence in Europe and not enough in North America, Asia and other parts of the world. However, I see this changing in the future because basically the European market is flat, the U.S. market is recovering, which won't last forever, and should increase more in the future. The great news is that in Asia we are experiencing steady growth—an average of 30% growth per annum, but starting from a relatively low number. So basically in terms of geographic presence, we are European, then American, then Asian. But in the future we would like to be more Asian and ideally well-balanced with the three regions more or less equal.

Q. *Are you bullish about the Asian market?*

A. Definitely and I am speaking of actual facts and figures. I am very confident about Asia for several reasons: our business is related to the GNP growth and on top of that in that region of the world they are in some ways very late in developing broadcasting to different countries and different regions. So we are in way like the FEDEX for broadcasters and we benefit from the local growth and the international and inter-regional broadcasting exchange. We are starting almost from scratch so we have so much to do but we will certainly benefit from the economic environment and the development of the broadcast industry in Asia.

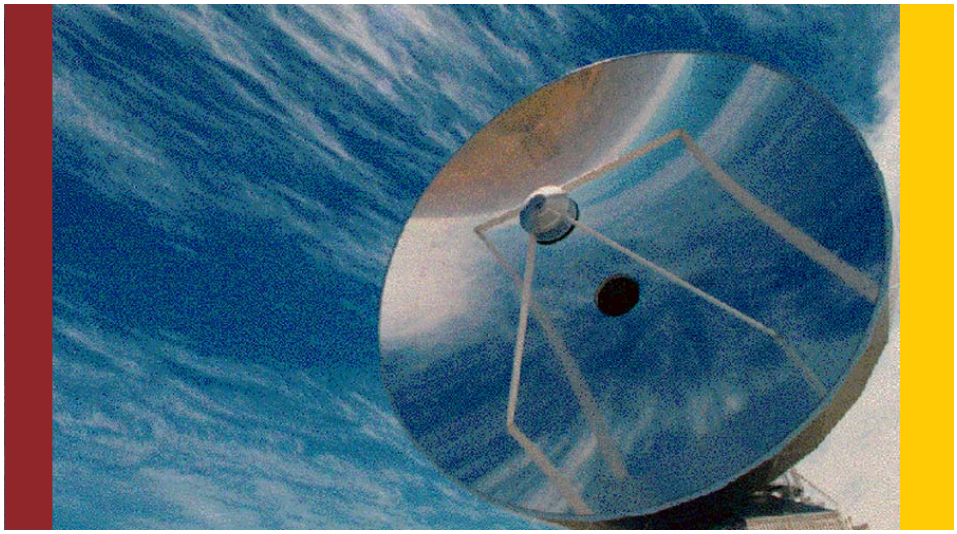
Q. *Where do you see the growth coming from in Asia?*

A. There are growth opportunities in everything, growth in local markets for example in Indonesia for Indonesia, then you have regional business and intercontinental business such as Asian channels broadcasting to Europe and America or vice-versa.

As for distribution, which we define as a taking a channel as is and broadcasting this channel—it's also a growing business as more and more channels are introduced and the increasing internationalization of these channels. As for

EXECUTIVE SPOTLIGHT

contribution, which we look at at GlobeCast as bringing the content to the channel as in sporting and special events, this is also growing because there is increasing demand for local content being put into international channels.



Q. *What applications do you see having the most potential growth in Europe?*

A . In terms of revenue, I would say the growth will come from distribution, the practical business of bringing one channel to the audience. It is a slight growth but it is continuous growth As far as contribution, I am less optimistic in terms of revenue growth, because I think content exchange will increase but IP will substitute traditional solutions with satellite and SNG, for example, with cheaper solutions such as the WING type (GlobeCast's IP based content exchange system). These IP-based solutions will be more cost-effective. So although content demand will increase, revenues will be coming from cheaper IP-based solutions.

Does this mean bad news for us? I'm not so sure, it really depends on the value-added you bring to the customer, for example an innovative solution like WING which will use less satellite transponder capacity. At the end of the day, we are not a satellite operator or manufacturer, we deal with our customers and we want to provide them with the best possible service.

Also, the market is significantly evolving. There are new actors such as mobile operators, they want TV on their cell phones. You have telcos who want TV on their DSL lines. And these new players need a technical provider like GlobeCast to distribute the content, etc. for example Orange which is one of leading mobile operators in the world. At the end of the day this could be a booming business.

We also have the enterprise market for example a company who needs to broadcast data to its many offices or to create an internal TV channel. We have different satellite-based and IP solutions to offer these companies.

EXECUTIVE SPOTLIGHT

Globecast Antenna Farm in Madrid, Spain.

Q. *I recently visited your facility in Spain and I was impressed with the joint-venture you have with a production company MediaPro. The synergy between the production company and GlobeCast being an international service provider seems to be working well with your customers in Spain. Do you have any similar joint-ventures in other countries?*

A .No, Spain is our unique experience in that field and the explanation is quite simple. In 1999 when we entered Spain (this was before I joined GlobeCast) we need a local partner and MediaPro was the ideal partner to get into the Spanish market. Later we used Spain for international connections and Spain has been pivotal in connecting us to Africa, Latin America and even Miami in the U.S. So Spain is a one vital element in our global strategy.

Q. *What about HDTV, what are the prospects of this new technology in the European market?*

A. I think it certainly has potential but it will not fuel a dramatic growth. I think some people have excessive expectations. It will not be a miracle business. It will take time, step by step, channel by channel. Obviously we are present in this market, we see HDTV as a natural technical trend and we have the all the tools necessary, but as of today, it is not yet a significant segment of market.

"IP is a technique. We are not in IP for the sake of IP. The key question is what do we do with IP. For us IP is a way of developing innovative services to the field of contribution like WING and to provide services to the enterprise market like multicasting via IP."

Q. *What about IP-based services?*

IP is a technique. We are not in IP for the sake of IP. The key question is what do we do with IP? For us IP is a way of developing innovative services to the field of contribution like WING and to provide services to the enterprise market like multicasting via IP.

Q. *What else can we expect from GlobeCast in the next few months?*

A. Well, GlobeCast is a business so you can expect more of the same: revenue, profit, to invest more and add more internal resources and keep the ball rolling. Are we confident? Yes we are. We will meet up to our expectations.

Q. *So will you grow from this year to next year?*

A. You know, one problem that we have in GlobeCast is that we account our figures in Euros and as you know we have businesses all over the world that account in other currencies like US dollar and the Singapore dollar. So the figures are somewhat deceptive due to the fluctuating exchange rates, for example the business we generate in the US in US dollars is actually growing in dollar terms but in terms of Euros it declined slightly due to the exchange rate. But the currency has stabilized. Let's say that in 2006 we should grow 3-5 percent, providing the exchange rates hold. SM

MARKET INTELLIGENCE

Middle East & North Africa in the Satellite Industry "Footprint"

By Martin Jarrold,
Chief of International Program Development, Global VSAT Forum

As various studies by the World Bank have shown, provision of telecommunications connectivity catalyzes local economic development, and there is a demonstrably clear and direct relationship between the level and growth of a country's Gross Domestic Product (GDP) and the levels of investment in its telecommunication infrastructure. Access to the means of communication permits commerce to expand, inward investment to flow, better education for a wider populace, modern healthcare to be within reach, and government to operate more effectively.

In fact, better governance is one of the values embodied in the United Nations Millennium Declaration, and one of the recognized tools for achieving this goal is Information and Communication Technologies (ICT). Guided by the principles of good governance, ICT applied within the public sector can enhance development effectiveness, and through e-government communication between administrations, citizens and businesses can help to spark further, and accelerated, economic and social development. Moreover, e-government can help transform current government systems, creating commitment to working with civil society in transparent and accountable ways to reduce poverty, safeguard the environment, redress inequality, foster security and fulfil social, economic, cultural, civic and political rights.

It is to address issues including these, and to focus on the key role of satellite-based telecommunications in the connectivity equation, that the GVF – the non-profit, non-partisan, association of the global satellite industry – in partnership with CWC Associates has organized a second major regional industry Summit for the Middle East and North Africa. The ***Middle East & North Africa Satellite Summit 2005*** **(MENASAT 2005)** will bring together speakers from, and address subjects pertinent to, the telecommunications markets of such countries as: Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, and Yemen.

MENASAT 2005 at the J. W. Marriott, Dubai, U.A.E., will build on the success of previous GVF conference and exhibition activity in the region, including: MENASAT 2004; the Middle East Satellite Summit 2003, in partnership with the Iran ISP Association; and, the GVF Arab States' Satellite Summit in 2002.

These gatherings of industry, government, and civil society telecommunications sector stakeholders have provided clear indication that the ICT marketplace continues to evolve a clearer perception of the role of satellite-based provision within the wider telecoms arena, not just for rural telephony and Universal Access/Universal Service, but also for facilitating wide-ranging end-user access to the products and services of the broadband applications sector that has been built upon the foundations of the Internet.

In fact, the Internet Service Provider (ISP) sector offers an excellent example of an industry which throughout much of the world could not service such a wide market base without using satellite. On a global level, some 15 per cent of ISP links to the Internet backbone and to their customers are carried over satellite, but in the Middle East this figure rises to 22 per cent and in Asia to almost 30 per cent.

The VSAT satellite industry is a well established one with a near 25-year lineage, and it continues to grow. This growth occurs precisely because more and more organizations and individuals are employing this satellite technology in the corporate sector, in small and medium size

MARKET INTELLIGENCE

The MENASAT Program: Summit Day One, 27 September 2005

0830: Registration
0930: Welcome & Introduction from the Summit Chair
0945: **Keynote Addresses**
H.E. Jowan Fouad Ma'ssoum, Minister of Communications, Iraq
H.E. Muna Nijem, CEO, Telecommunications Regulatory Authority, Jordan
1015: **Executive Interview and Discussion. International, regional and national satellite operators: Connectivity initiatives in the MENA region**
Flavien Bachabi, Intelsat; Patrice Paquot, Eutelsat; Osman Dur, Turksat; Peter Jackson, Asiasat; Sergey Tsekhmistrov, RSCC
1130: Refreshments
1200: **Liberalization and regulation in MENA markets**
Abdelfattah Abuqayyas, ITU-ARB; Ali Amiri, Etisalat; Alla Fahmi, NTRA, Egypt
1315: Lunch
1430: **Case Study – Setting-up a new satellite network for business: DVB-RCS**
Jaafar Najdi, Streamlink Communications
1500: **Developing ICT access via satellite, and via satellite-terrestrial hybrid technologies**
Robert Feierbach, Skylogic; Harald Stange, Detecon Al Saudia; Rash Jhanjee, iDirect, Nidal Abou-Ltaif, Avaya; Lee Davidson, Ericsson
1630: Refreshments
1700: **Roundtable: The role of satellite telecommunications in sustainable economic and social development**
Bruno Lanvin, World Bank; Brian Everard, Oxfam UK; Omar Bizri, UNESCWA
1745: Concluding remarks
1800: Adjourns

MARKET INTELLIGENCE

The MENASAT Program: Summit Day Two, 28 September 2005

0900: Registration
0930: Welcome & Introduction from the Summit Chair
0945: **Case Study – National reconstruction of Iraq**
Ali Hasan, ITPC; Samer Halawi, Inmarsat
1015: **Roundtable: New broadband satellite systems and their effect of ICT applications and networks in the MENA region**
Mohamed Elghamry, Egyptsat; Soheil Mehrabanzad, HNS; Ahmed Mekky, Falconstream; Ulrich Kiebler, ND Satcom
1130: Refreshments
1200: **Interactive Q&A: How can the telecommunications industry expand and update services to meet the specific needs of MENA countries?**
Marwan Al Ahmadi, MTC; Ahmed Mahjoub, Tunisie Telecom; Akil Beshir, Egypt Telecom
1315: Lunch
1430: **Roundtable: ICT development and satellite finance**
David Grover, Barclays Capital*; Shaikha Al-Bahar, National Bank of Kuwait*; Abdellatif Jouahri, Bank Al-Maghrib*; Hassan Azzee, Abu Dhabi General Investment Authority (* = invited)
1545: Refreshments
1615: **Case Study – Energy**
t.b.c.
1645: Concluding remarks
1700: Close

For more information on **MENASAT 2005** please contact Mike Malyon at CWC Associates at MMalyon@thecwcgroup.com or telephone + 44 (0)20 7089 4200. Visit the MENASAT 2005 web site at www.thecwcgroup.com/.

enterprises (SME), in government, in small office-home office environments, and in the consumer sector.

These various facets of the application of satellite – and of satellite-terrestrial hybrid technologies – to developing communications solutions feature strongly in the program for **MENASAT 2005**, wherein a wide community of end-user types will be represented.

An examination of the essentially complementary nature of satellite systems and services and various terrestrial wireless platforms such as WiFi, WiMax and GSM – hybridization that aids the expansion of services into fresh geographic realms, and extend even further the support provided by satellite to the various mission-critical communications applications of modern enterprize – will be examined. The event program will also cover the application of satellite-based solutions by the non-governmental organization (NGO) sector in the fields of development and humanitarian missions, as well as the role of these solutions in rebuilding the nation of Iraq, and in supporting government networks of all types, across the region's national administrations.

The role of governments in facilitating dynamic telecommunications markets through regulatory reform will also be addressed, with a specific focus on the latest regulatory developments in the region. Without entering the troublesome realm of semantics, discussion is likely to include examination of the exact definition and precise role of the *independent* regulator, a topic which often affords a confusion of the exact meaning of separateness and of independence. SM

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

STOCK MONITOR

Company	Stock Symbol	Price (US$)(August 26)	52-wk Range
APT SATELLITE	ATS	**1.25**	1.20 - 1.68
ANDREW CORP	ANDW	**11.60**	10.56 - 15.49
ASIA SATELLITE TELECOMMUNICATIONS (ASIASAT)	SAT	**19.15**	17.11 - 20.55
BALL CORP	BLL	**37.753**	5.04 - 46.45
BOEING CO	BA	**66.31**	48.10 - 68.38
BRITISH SKY ADS	BSY	**40.78**	33.22 - 44.99
CALAMP CORP	CAMP	**8.38**	5.23 - 10.18
C-COM SATELLITE SYSTEMS	CMI.V	**0.33**	0.21 - 0.57
COM DEV INTL LTD	CDV.TO	**2.55**	2.25 - 3.28
COMTECH TELECOM CORP	CMTL	**33.84**	11.5667 - 39.70
THE DIRECTV GROUP	DTV	**16.00**	13.88 - 18.25
ECHOSTAR COMM.	DISH	**30.02**	27.26 - 34.38
FREQUENCY ELCECTRONICS	FEI	**12.45**	9.80 - 16.05
GILAT SATELLITE NETWORKS	GILTF	**6.00**	4.47 - 7.62
GLOBECOMM SYSTEMS INC	GCOM	**6.30**	5.08 - 7.58
HARRIS COR	PHRS	**37.19**	23.675 - 38.18
HONEYWELL INTL INC	HON	**38.02**	31.85 - 39.50
INTEGRAL SYSTEMS	ISYS	**22.2719**	17.18 - 24.70
KVH INDS INC	KVHI	**9.90**	6.76 - 13.23L-3
COMM HLDGS IN	LLL	**80.58**	61.75 - 81.73
LOCKHEED MARTIN CORP	LMT	**61.76**	52.19 - 65.46
NEWS CORP	NWS	**17.20**	15.305 - 19.41
NORSAT INTL INC	NSATF.OB	**1.00**	0.43 - 1.5
1NTL INC	NTLI	**61.86**	53.35 - 73.79
ORBITAL SCIENCES	ORB	**11.69**	8.84 - 13.10
PT PASIFIK SATELLITE	PSNRY.PK	**0.18**	0.09 - 0.30
QUALCOMM INC	QCOM	**39.85**	32.08 - 44.99
RADYNE CORPORATION	RADN	**11.11**	6.55 - 11.60
SCIENTIFIC ATLANTA	SFA	**36.71**	24.61 - 39.23
SIRIUS SATELLITE RADIO	SIRI	**6.70**	2.25 - 9.43
SES GLOBAL FDR	SDS.F	**12.45**	6.70 - 12.47
TRIMBLE NAVIGATION	TRMB	**34.19**	24.56 - 44.55
VIASAT INC	VSAT	**23.07**	16.83 - 25.00
XM SATELLITE RADIO	XMSR	**33.732**	6.16 - 40.89

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