SATMAGAZINE.COM

July-August 2005 | Worldwide Satellite Magazine | Vol. 3 No. 4

Constructing IPTV

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COVER STORY

By Howard Greenfield

IPTV is becoming a key driver for the satellite services sector. But are satellite players strategically positioned for the change and what can we expect to see in the coming months as the service and market maps are carved up?

FEATURE

By Chris Forrester

The European satellite radio market is heating up since the Global Radio collapse a few years ago. Rivals Worldspace and Europa-Max are trying to make inroads in the lucrative European market.

COUNTRY PROFILE

By Bermardo Schneidermann

The war-ravaged South American country of Colombia is bridging the digital divide by leveraging satellite technology for social and economic development projects.

FEATURE

By Chris Forrester

A bullish future is envisioned for HDTV in Europe, with satellite taking a lion's share of this growth.

REGULAR DEPARTMENTS

NOTE FROM THE EDITOR

A Broadband Summer

This could be the summer when broadband finally fulfills its long awaited promise. The much-touted WildBlue broadband via satellite service finally launched last month in the U.S. WildBlue installed its first customer on June 2nd-- David and Theresa Tuttles' home in Strasburg, Colorado. WildBlue is aiming at over 20 millions homes , mostly in rural areas of America where there is little or no access to high-speed internet via cable or other means.

"WildBlue is excited to begin smashing the digital divide in rural communities across the country," said an ebullient Tom Moore, CEO of WildBlue. "This is a truly historic moment as we make affordable broadband available to virtually every home and small office across the U.S."

Time will tell how successful Wild Blue will be in reaching out to the U.S. broadband market. Many analysts and industry observers are pinning their hopes on the success of WildBlue, which could spur other to replicate that model in other markets.

Meanwhile in Asia, everybody is waiting with bated breadth for the launch of Shin Satellite's iPStar satellite, which is being marketed as the "broadband internet" satellite. As of press time (July 6) Arianespace announced another delay of the launch for a few days. But if all goes well for the Ku- and Ka-band satellite, iPStar, like WildBlue can provide a spark that can usher in a new era in the huge Asian broadband market. The Asian market, the largest telecom market in the world, has been enjoying a resurgence recently after a riding out a severe downturn in the late 90s.

One of the emerging broadband services is IPTV, which is the focus of this issue. Telcos and other service providers are looking to IPTV to provide the "triple play" of video, data and voice, which will be the template for the future of broadband services. How satellites will be able to get a piece of the IPTV action is the subject of our cover story by Howard Greenfield starting on page 18 of this issue.

In contrast to last summer when the industry was rocked by the takeover of private equity firms of the largest satellite companies, this summer is more focused on new applications and the opening of new markets. And it could be the summer when broadband finally gets off the ground.

Virgil Labrador

SATMAGAZINE.COM

Published monthly by
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Cover Design by: Simon Payne

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AUGUST

August 25-28, Beijing, China
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SEPTEMBER

September 5-9, Paris, France
World Satellite Business Week 2005
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IBC 2005
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September 13-16, The Waldorf Hilton Hotel, London, England
7th Annual VSAT 2005 Conferece
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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 21-22, Sheraton Delfina, Santa Monica, California, USA
2005 PTC Mid-Year Seminar
Tel: +1 808 941 3789
Email: my05@ptc.org
Website: www.my2005.org

September 27-28, Dubai, United Arab Emirates
MENASAT 2005 Satellite Summit to serve as private and public sector forum
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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
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Website: itu.int/AMERICAS2005/index.html

October 4-6, Omaha, Nebraska USA
Strategic Space 2005
Tel: (719) 576-8000
Website: http://www.stratspace.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
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Website:www.satconexpo.com

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Intelsat Americas-8 Launched Successfully

LONG BEACH, Calif. — Sea Launch Co. successfully delivered the Intelsat Americas-8 (IA-8) communications satellite to geosynchronous transfer orbit on June 23.

A Zenit-3SL vehicle lifted off at 7:03 am PDT (14:03 GMT), from the Odyssey Launch Platform, positioned at 154 degrees West Longitude. All systems performed nominally throughout the flight, according to Sea Launch. The Block DM-SL upper stage inserted the 5,500 kg (12,125 lbs.) satellite to geosynchronous transfer orbit, on its way to a final orbital position of 89 degrees West Longitude. A ground station in Fucino, Italy, acquired the spacecraft's first signal less than an hour after liftoff, as planned.

The satellite, built by Space Systems/Loral and Intelsat's most powerful to date, will operate from 89ºW longitude and will offer prime, powerful landmass coverage to customers in the Americas, the Caribbean, Alaska and Hawaii. A substantial portion of the capacity on IA-8 was committed to customers prior to the satellite's launch, according to Intelsat.

IA-8, which will begin service during August of 2005, features C-, Ku- and Ka-band transponders. The Ka-band payload on the IA-8 satellite represents Intelsat's first Ka-band capacity in orbit, and the IA-8 is just the second commercial satellite in North America to have such capacity. IA-8 is also the first satellite in Intelsat's fleet to feature two high-powered zone beams specifically designed to provide complete zonal coverage of South America.

The 89ºW location falls in the valuable North American broadcast arc, offering broadcast customers an ideal distribution platform. All customers on IA-8 will have access to increased power and flexibility for all applications, including those used by the government, broadcasters, corporations, service providers and other businesses.

Intelsat, Ltd. CEO, David McGlade, said IA-8 represents a very important launch for Intelsat and North American customers as it offers high-powered Ku-Band coverage of all 50 states, relieving some of the current capacity constraints facing all operators serving the U.S. market.

Space Systems/Loral to Build New Satellite for XM

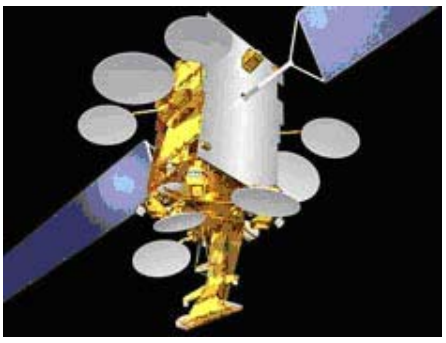
PALO ALTO, Calif. — Space Systems/Loral (SS/L) said on June 7 it has been awarded a contract by XM Satellite Radio to build XM-5, a high-power, digital audio radio service (DARS) satellite. The spacecraft will serve as a ground spare in the XM Satellite Radio fleet, ensuring XM subscribers across North America with continued high- quality, digital- music, entertainment and data services.

Scheduled for delivery in 2007, XM-5 has an on-orbit design life of 15 years and will carry a state-of-the-art DARS payload featuring two large, unfurlable mesh antennas. Its end-of-life power capability of more than 18 kilowatts will make it one of the world's most powerful communications satellites.

XM-5 will be based on SS/L's 1300 platform. Its high efficiency solar arrays and lightweight batteries will be designed to provide uninterrupted electrical power.

XM said its XM-5 is intended as a ground spare for the company's in-orbit fleet. Boeing Satellite Systems has built XM's three in-orbit satellites (launched by Sea Launch). Boeing is also completing the construction of XM-4, which will be available for launch in 2006.

Alphabus Contract Signed; Development of European Large Communications Satellite Begins



An artist's view of Alphabus *(EADS-Astrium photo)*

PARIS — EADS Astrium and Alcatel Space signed on June 16 a contract with ESA (European Space Agency) and CNES (Centre National d'Etudes Spatiales of France) to begin full development of Alphabus, the new European platform for

next-generation communications satellites.

Under the contract, ESA and CNES will support the industrial development of Alphabus and production of a first flight model.

For several years, a joint team from Europe's two leading satellite manufacturers has been working with the support of ESA and CNES to define a platform to meet the needs of the upper end of the communications satellite market. EADS Astrium and Alcatel Space have decided to combine their technical and financial resources on a common development program, contributing their respective new technologies and products. Alphabus is the European initiative to secure its position in the world market for high power satellites.

EADS Astrium said the Alphabus platform is designed for communications satellites with payload power in the range 12 18 kW. This will meet future requirements for fleet renewal of operators of large satellites, offering a lower cost per transponder and the ability to reconfigure missions.

It will also enable the development of applications including new-generation mobile and broadband services, digital audio broadcast and HDTV. Satellites based on Alphabus will have a launch mass of between 6 and 8 tonnes, and will make full use of the new-generation of 5 meter fairings on the latest commercial launchers.

Arianespace Sets July 7-8 Launch for Thailand's iPSTAR; Reschedules Spaceway 2, Telkom 2 Flight

KOUROU, French Guiana — A technical problem with one of the two satellites slated for launch on the night of June 24-25 has resulted in a reordering of Arianespace's mission scheduling.

Arianespace said the next launch is now set for the night of Thursday, July 7 to Friday, July 8, 2005, using an Ariane 5 Generic vehicle to orbit the iPSTAR satellite for Thailand's Shin Satellite Plc. telecommunications operator.

Weighing in with a launch weight of 14,341 pounds (6505 kilograms), iPSTAR-1 will be the heaviest commercial satellite ever delivered to geosynchronous orbit. Designed and constructed by Space Systems/Loral (SS/L), iPSTAR-1 is a 1300S spacecraft, a variant of SS/L's 1300 product line that supports power requirements between 6 and 18 kW.

"iPSTAR-1 is one of the largest and most technologically advanced satellites ever built for a commercial customer," said C. Patrick DeWitt, president of Space Systems/Loral.

Built for Shin Satellite, Plc of Thailand, iPSTAR-1 is designed to provide both enterprises and consumers throughout Asia, Australia and New Zealand with various levels of Internet access services, competing with cable modems and digital subscriber lines (DSL).

Canada Grants Broadcasting Licenses to Sirius and XM

NEW YORK — Canadian partners of Sirius Satellite Radio and XM Satellite Radio were both granted broadcasting licenses by the Canadian Radio-television and Telecommunications Commission (CRTC) to deliver commercial-free music and premier news, sports, talk, and entertainment to Canadians from coast-to-coast.

Granted licenses were Sirius Canada, Inc., which is owned by Sirius, the Canadian Broadcasting Corporation (CBC) and Standard Radio, and Canadian Satellite Radio (CSR), the partner of XM.

Commenting on the grant of license, Sirius said it recognized that the CRTC had worked hard on a reasonable and creative framework for Sirius to move forward in providing Canadians with an outstanding programming line-up. "Sirius plans to explore the conditions of the license in more detail with its business partners, and will be able to comment further once a thorough analysis of today's decision has been made," the company said in a statement.

Hannover Fairs Releases Future Industry Trends Survey of Satellite Executives at ISCe 2005

LONG BEACH, Calif. — Hannover Fairs USA, Inc. has announced the results of a satellite industry survey conducted at the International Satellite Communications conference and expo (ISCe 2005) that took place on May 31-June 2 at the Hyatt Regency in Long Beach, California.

The survey was conducted by Futron Corp., a technology management-consulting firm specializing in the space industry. The results were tabulated using written responses from conference attendees, composed primarily of VP-level and above

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executives from the world's leading satellite operators, manufacturers and service providers.

"ISCe provides the best opportunity for top executives and government leaders in the satellite communications industry to preview new technologies and opportunities," said Joachim Schafer, president of Hannover Fairs USA. "It is important for decision-makers to frequently evaluate future industry trends in order to stay at the top of their respective industry segments."

He added that the opinions they give about the future of the satellite communications industry provide important information that will contribute to the development of innovative products and opportunities in both commercial and government enterprise.

The survey focused on future business opportunities and trends, in the government and commercial satellite industry sectors. The findings:

- 22% reported that government agencies accounted for over hree-quarters of their new business in 2004; 44% reported that less than a quarter of their business was from government agencies.
- 70% of respondents stated that, among government agencies, the DoD was the primary source of their new business in 2004. A similar percentage are targeting new

products and services for the DoD over the next two to three years. The Department of Homeland Security, Other Public Safety, and Other Civil Government Agencies (e.g., State Department, Department of Agriculture) each represented only 10-15% of new business for 2004. However, each of these categories is being targeted with new products and services by almost 30% of respondents.

- Respondents anticipate that over the next two to three years, the government will buy 25-30%% of its equipment as COTS or off the shelf, as opposed to specifying unique, customized products.

- For both government and commercial markets, hardware represents the largest area of anticipated new product & service revenue for over 30% of ISCe respondents over the next two to three years. A slightly lesser percentage (25-30%) forecast their greatest area of new revenue to be new hybrid network services, with 20-25% indicating new revenue to be led by satellite capacity sales. New software products & services are anticipated to lead new revenues for less than 15% of respondents for both government and commercial markets.

- Respondents anticipate that the area with the greatest new business will be in the areas of data/internet services and mobile services. The smallest percentage reported video distribution as their likely source of new revenues over the next two to three years.

In conclusion, respondents anticipate the key sectors for growth will be DoD and commercial mobile communications, hardware (including spacecraft), and hybrid networks.

Inmarsat Taps ILS for Atlas V Launch

MCLEAN, Va. — Less than three months after the successful launch of the first of its next-generation satellites, Inmarsat has signed a deal with the International Launch Services (ILS) to add the Atlas V vehicle as an option for future I-4 launches. An ILS Atlas V launched the first Inmarsat-4 satellite on March 11 from Cape Canaveral, Fla.

The satellite, one of the largest and most sophisticated commercial satellites ever launched and 60 times more powerful than its predecessors, began operations last week.

"We're pleased to have helped Inmarsat lay the foundation for its new broadband service by launching the first I-4 satellite this year," said ILS president Mark Albrecht. "We thank Inmarsat for again putting its confidence in ILS and Atlas V."

"The new contract for Atlas V provides flexibility to serve as a backup for the launch of the Inmarsat-4 F2 spacecraft, now nearing completion at EADS Astrium in Toulouse," said Gene Jilg, Inmarsat vice president responsible for the Inmarsat-4 program. "Backup capability using a different vehicle family from the prime has been a hallmark of Inmarsat's strategy for three satellite generations. Atlas has delivered 100 percent reliability for Inmarsat thus far and we look forward to continued success."

The I-4 constellation will support the introduction of the new BGAN service, delivering Internet and intranet access, video-on-demand, videoconferencing, fax, email, phone and LAN access at speeds of up to half a megabit per second. BGAN will also be compatible with 3G cellular systems. The I-4 satellites are Eurostar E3000 models built by EADS Astrium, weighing nearly 6 metric tons.

Arianespace to Launch BSAT-3a for Japan

BSAT-3a will be launched on an Ariane 5 in the second quarter of 2007 from Kourou, French Guiana

LE BOURGET, France — Arianespace CEO Jean-Yves Le Gall announced at the Paris Air Show on June 14 that Lockheed Martin Commercial Space Systems has contracted Arianespace to launch the BSAT-3a spacecraft for the Broadcasting Satellite System Corp. (B-SAT) of Japan.

BSAT-3a will be launched on an Ariane 5 in the second quarter of 2007 from Europe's Spaceport in Kourou, French Guiana.

BSAT-3a will be the 6th satellite entrusted by the B-SAT. to the European Ariane launcher and the 38th Lockheed Martin platform to be lofted by Arianespace. This is the 22nd satellite payload that Arianespace has won in Japan out of the 30 that have been open to commercial launch services competition.

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Satellite Industry Generates $97.2 Billion in 2004 — SIA

LONG BEACH, Calif, — The commercial satellite industry generated $97.2 billion in revenue in 2004, an increase of 6.7 percent over 2003 industry revenues, according to the Satellite Industry Association (SIA).

In its annual "State of the Satellite Industry Report," SIA reported that the satellite industry revenues were driven primarily by the satellite services sector, which accounted for $60.9 billion, or 62.7% of industry revenues.

Once again satellite services was dominated by Direct-To-Home (DTH) services, which accounted for $49.5 billion, roughly 51% of the entire industry's revenues and 81.3% of satellite services revenues, SIA said in its report.

Executive director David Cavossa noted that "the satellite industry continues to grow at a healthy rate and emerging services and applications such as HDTV, satellite radio, satellite broadband, and satellite hybrid solutions are expected to lead the industry's growth in 2005."

2004 marks the 9th year the Satellite Industry Association and the Futron Corp. have compiled the satellite industry's annual statistics. The study is based on a survey of the commercial satellite industry to determine aggregate revenue, employment, and output indicators. The study covers satellite manufacturing, launch services, satellite services, and ground equipment manufacturing.

According to the survey, global satellite manufacturing revenues were $10.2 billion, a 4% increase over 2003 revenues. U.S. satellite manufacturing revenues dropped 15% to $3.9 billion, due to reduced government spending and reduced overall orders in

2002. Revenues for satellite manufacturing and launch services are booked upon launch, not at the awarding of a contract.

Overall launch industry revenues decreased 13% to $2.8 billion in 2004. The proportion of government versus commercial launches continues to shift as well. Of the total global launches in 2004, 53% were government and 47% were commercial. In 2000, 66% of total global launches were government and 34% were commercial.

The satellite ground equipment sector accounted for $23.3 billion in revenue – a 5% increase over 2003. The largest revenue growth in this sector has been observed is in end-user equipment sales for VSAT, satellite television, high-speed Internet, and satellite radio services. The full report is available at www.sia.org.

NASA Taps Lockheed Martin to Build Spacecraft for Jupiter Mission

DENVER — NASA has announced that the second mission in its New Frontiers Program, a mission called Juno to fly to Jupiter, will now proceed to a preliminary design phase. At the end of the preliminary design study, NASA said the mission must pass a confirmation review that will address schedule, technical and cost risks before being confirmed for the development phase.

Dr. Scott Bolton of Southwest Research Institute, San Antonio, TX, has been named the Principal Investigator while NASA's Jet Propulsion Laboratory, Pasadena, Calif., will provide mission project management. Lockheed Martin Space Systems has been designated to build the spacecraft. Juno will be the first solar-powered mission to Jupiter. Its seven science instruments are designed to unlock secrets of solar system formation.

A nominal mission will place the Juno spacecraft in a polar orbit around the giant planet for one year. As it orbits from pole to pole on a unique path designed to avoid most of Jupiter's harsh radiation, Jupiter will rotate beneath, allowing the science instruments to produce full-planet maps of gravity, magnetic fields and atmospheric water content as well as studying Jupiter's auroral particles and fields.

The selected New Frontiers science mission is targeted for launch no later than June 30, 2010, within a mission cost cap of $700 million.

The New Frontiers Program is designed to provide opportunities to conduct several of the medium-class mission investigations identified as top priority objectives in the Decadal Solar System Exploration Survey, conducted by the Space Studies Board of the National Research Council.

SpaceX, NASA Sign Agreement on Human Spaceflight Development

Elon Musk, CEO of SpaceX, and Jefferson D. Howell Jr., Director of NASA's Johnson Space Center, sign the Space Act Agreement on human space flight development.

HOUSTON — Space Exploration Technologies Corp. (SpaceX) and NASA signed on June 2 a Space Act Agreement on the development of human spaceflight hardware.

Under the agreement, SpaceX and Johnson Space Center (JSC) will identify joint opportunities in pursuit of cost effective human spaceflight systems.

"This agreement provides a framework for working with NASA on future spaceflight needs in support of low Earth orbit space missions and other steps in the Vision for Space Exploration," said Elon Musk, CEO of SpaceX. "We look forward to working with NASA to create an exciting future in human spaceflight."

Space Act Agreements are flexible partnerships that allow NASA to work cooperatively with industry to develop and transfer technology in support of national priorities and NASA's mission. These agreements are collaborative R&D efforts that provide for an ongoing exchange of personnel, use of NASA facilities, expertise, equipment and technology.

SpaceX is developing a family of launch vehicles intended to increase the reliability and reduce the cost of access to space. According to SpaceX, the maiden flight of the its Falcon I rocket, carrying a US Defense Department communications satellite, is scheduled to follow the launch of the last Titan IV from Vandenberg Air Force Base.

SpaceX said assuming an on time departure of the classified Titan IV mission, the company expects a launch window in late summer this year. The second Falcon I launch will be from the Kwajalein Atoll, also in late summer. SM

EXECUTIVE MOVES

German Chair for ESA Council

ESA's Director General Jean-Jacques Dordain and DLR (German Aerospace Centre) chairman of the board, Prof. Sigmar Wittig, at the German Air and Space Show, ILA, in Berlin, 10 May 2004 *(FOTOAC/Kirst photo)*

PARIS — Sigmar Wittig, currently chairman of the executive board of the German Aerospace Centre (DLR), will take over as chairman of the European Space Agency Council for the next two years beginning July 1.

Professor Wittig was unanimously elected at the 179th Council meeting, held at the European Space Operations Centre (ESOC) in Darmstadt, Germany on June 21-22. He will take over from Mr Per Tegnér of Sweden, whose term of office ends on June 30.

Born on February 25, 1940 in Nimptsch, Sigmar Wittig studied mechanical engineering and was awarded a PhD from the University of Aachen. After nine years in the United States (1967–1976), he worked for many years (1976-2002) as professor and head of the institute for thermal turbomachinery at the University of Karlsruhe, eventually becoming University President in 1994.

In March 2002, he was appointed Chairman of the Executive Board of the DLR and has been Head of the German Delegation to ESA since then.

EchoStar Names Neuman President and COO

ENGLEWOOD, Colo. — EchoStar Communications Corp. has appointed Michael A. Neuman as president and chief operating officer, overseeing day-to-day operations. The company today also appointed board member Carl Vogel as vice chairman. He will focus his efforts on financial and strategic initiatives as a full-time employee of the Company.

Neuman, most recently the president of Bell Canada Enterprises subsidiary Bell Mobility, fills a post that had been vacant for more than a year. He led Canada's leading wireless carrier to its most profitable growth in its 19-year history. He was with Bell Mobility for three years and previously served as president of Bell ExpressVu Satellite Television, WorldLinx Telecommunications and Cerberus Canada.

Michael A. Neuman

Vogel joined EchoStar's board of directors in May. Most recently, he was president and chief executive officer of Charter Communications, a Fortune 500 company. Prior to joining Charter, Vogel held various senior executive positions with companies affiliated with Liberty Media Corporation and was responsible for portfolio investments in subscription television, content distribution, broadband, telecommunications and satellite sectors worldwide. He was also chairman and CEO of Primestar and CEO of Star Choice until each company was sold or merged with other satellite operators.

Vogel, who was EchoStar's president from 1994 to 1997, was a key member of the executive team that created DISH Network.

CASBAA Steps Up Regulatory Commitment, Appoints New VP

John Medeiros

HONG KONG — The Cable & Satellite Broadcasting Association of Asia (CASBAA) appointed on June 21 John Medeiros as Vice President for Government Relations and Regulatory Affairs.

Medeiros will be responsible for oversight of the Association's anti-piracy and regulatory

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activities across an Asia Pacific footprint covering 14 markets. He reports to CASBAA CEO Simon Twiston Davies.

This new post, CASBAA said, is part of a significant expansion of the Association's campaigns to counter piracy of pay-TV broadcasts and to advocate modern regulatory practices for the broadcasting industry.

Medeiros joins CASBAA following an extensive career with the US government, most recently as deputy chief of mission at the U.S. Embassy in Singapore and Deputy U.S. Consul General in Hong Kong. With a dozen years experience in Asia, Medeiros' responsibilities have included assisting media and telecommunications companies to overcome regulatory and anti-competitive barriers, such as piracy.

Medeiros' most recent achievements include work on market access issues and on persuading regional governments to substantially upgrade law enforcement work, including copyright enforcement and co-operation against organized crime.

Northrop Assigns 3 VPs to Manage Programs, Engineering and Advanced EHF

REDONDO BEACH, Calif. — Northrop Grumman Corp. has assigned three current vice presidents at its Space Technology sector to handle new responsibilities in leading programs, engineering and the Advanced Extremely High Frequency (EHF) military satellite communications program.

David M. DiCarlo

David M. DiCarlo, 54, formerly vice president of engineering, has been named vice president of programs. He succeeds Edward J. Nowacki, 60, who is retiring after a 25-year career with the company. In his new position, DiCarlo is responsible for the management, development, deployment and operation of space systems and other deliverable end items produced by Northrop Grumman Space Technology. Previously during his 30 years with the company, DiCarlo served in vice presidential roles leading the sector's former electronics and technology division and its broadband wireless organization.

Clayton K.S. Kau, 54, previously vice president and program manager for Advanced EHF, has been appointed vice president of engineering. A 31-year veteran of the company, he is now responsible for all engineering activities and processes within Space Technology, as well as for all microelectronics process development and fabrication. Kau has served in a number of important program management and engineering leadership roles for the sector, including program manager of the Milstar medium data rate payload, director of technology for the space communications division, director of the digital development laboratory, and manager of a payload systems engineering organization.

Clayton K.S. Kau

John F. Daegele

John F. Daegele, 44, will succeed Kau as vice president and program manager of Advanced EHF. Daegele, formerly vice president and director of systems engineering, has served in a number of top-level program, engineering and technology leadership positions during his 22-year career with the company, including vice president of science and technology for TRW Inc. (acquired in 2002 by Northrop Grumman), director of indium phosphide programs, program manager in the telecommunications programs division, and director of system engineering and/or system integration on several commercial and national security space programs.

"This group of executives has a wealth of talent, the depth of management experience, and the customer relationships that will serve the company well," said Alexis Livanos, president of the Space Technology sector. "They will ensure that we continue to perform well and have an integral part in our customers' mission success."

Telesat Names Concelmo Sales Director for US Broadcast Market

NEW YORK, NY — Telesat has appointed Peter A. Concelmo as director of sales for the U.S. broadcast market.

With more than 30 years experience in the broadcasting and telecommunications industries, Telesat said Concelmo will help to guide the company's continued growth in providing services to broadcasters across America. His responsibilities include expanding Telesat's work with various industry partners,

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Peter A. Concelmo

including The SpaceConnection – a well-respected broadcast service provider acquired by Telesat earlier this year.

Until recently, Concelmo was the northeast regional manager for Tandberg Television. In previous roles, he was responsible for satellite transponder sales to major broadcasters and cable television programmers from coast to coast. Concelmo will be based in the New York region, focused on national and regional television broadcasters.

Telstra Appoints New CEO

Solomon (Sol) Trujillo

SYDNEY — Telstra Corp. chairman Donald McGauchie AO announced on June 9 that the board has appointed Solomon (Sol) Trujillo as chief executive officer and as an executive director of the company.

Trujillo ,53, will take up his position on July 1, 2005. He will replace Dr. Ziggy Switkowski, who will step down on July 1, 2005.

McGauchie said Turillo has successfully managed fixed line, wireless, broadband and directory businesses - virtually every

EXECUTIVE MOVES

facet of Telstra's business. "He has enormous depth, expertise and understanding in matters regulatory, operational, financial, marketing and sales and a deep understanding of technology," he said.

Trujillo has been appointed on an ongoing contract. He holds a Bachelor of Business and a MBA degree from the University of Wyoming. He was previously a non executive director and then CEO of Orange based in London, one of the largest mobile companies in Europe, was the CEO of hi-tech company, Gravitron and spent 26 years with US West Inc, including serving as its chairman, CEO and president for 5 years.

Trujillo is currently sitting on the boards of Pepsi, Target, Gannett, (the newspaper chain) and EDS. He will leave all but one of these board positions.

Eagle Broadband Appoints Marc Surette as VP of Sales, Satellite Communications

HOUSTON — Eagle Broadband (AMEX: EAG) has named Marc Surette, formerly with Marconi Communications Federal, Silicon Graphics (SGI) and Electronic Data Systems (EDS) as vice president of sales, satellite communications, effective immediately.

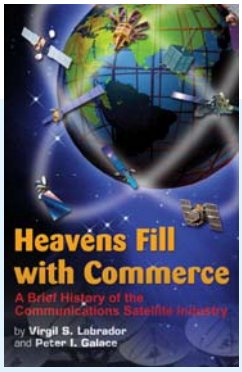
Surette will assume global sales responsibility for Eagle's Satellite Communications Media Extender (SatMAX) technology for civilian government, military, law enforcement and commercial/ enterprise markets. He brings 15 years of proven sales and technical experience, a Top-Secret government clearance and a demonstrated track record selling networking and communications technologies to civilian government, military and enterprise customers. SM

NEW PRODUCTS

Comtech EF Data Helps SatCom Users Unlock Operating Expense Savings With New Bandwidth Optimization Tool

TEMPE, Ariz. — Satellite equipment manufacturer Comtech EF Data has created a Bandwidth Optimization Tool that allows users to instantly estimate potential operating expense savings. The company said this is in line with its commitment to lower the "Total Cost of Ownership" for satellite communications users.

Comtech said this tool validates the possibilities for optimizing satellite bandwidth utilization and throughput using realistic satellite link and earth station configurations. Users enter their current satellite earth station and link parameters to start the calculations. The tool then calculates the potential space



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

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

NEW PRODUCTS

segment savings or throughput increase. Users can create and save multiple links.

As an example of potential savings, if a user currently operates IESS 310 satellite circuits (i.e. 8PSK/TCM, R= 2/3) at T1/E1 or higher rates – then his/her satellite space segment can typically be reduced 30% or more using Comtech EF Data's innovative products and solutions. Or, if a company currently deploys legacy modems (5+ years or older), the operating expense savings garnered from replacing them would easily offset the replacement costs, and the return on investment could be months – not years.

Untapped savings exist in almost all SatCom applications, with the potential for significant savings in bandwidth-intensive applications, such as trunking. This tool assists users with realizing potential untapped savings – whatever their market

Readers are invited to register for this free tool and "see" how they could optimize their space segment utilization and save money by logging onto www.comtechefdata.com and clicking on the "Unlock Operating Expense Savings" link. This launches the Bandwidth Optimization Tool home page where users can register to start their calculations.

Alaska's Largest Communications Provider, GCI, Chooses Glowlink Satellite Monitoring Equipment

LOS ALTOS, Calif. — Glowlink announced on June 20 it received a contract from GCI for satellite monitoring equipment based on the Glowlink Model 1000 spectrum monitoring system.
GCI is Alaska's largest provider of Internet services with dial-up, cable modem, wireless, digital subscriber line (DSL) and dedicated access. Its cable television services pass 90 percent of the state's households with 65 percent penetration.

Glowlink said its solution will enable GCI to more efficiently monitor and manage its satellite services.

NEW PRODUCTS

"With its operator friendly interface and advanced DSP based functionalities, the Glowlink solution will provide GCI with a reliable means of managing our network," said Terry Nunn, GCI RF Systems Engineer. "Choosing Glowlink as our monitoring system will enable us to proactively respond to developing transponder issues before they affect our customers."

The Glowlink system will provide GCI with an industry leading monitoring solution to effectively monitor satellite traffic, provide unsurpassed interference detection capabilities, prevent transponder compression problems, and initiate quick response to customer satellite traffic issues.

"We are pleased to be selected as the monitoring system of choice by GCI, one of the most important communications service providers for the state of Alaska," said Jeffrey C. Chu, Glowlink President and CEO. "This contract further affirms Glowlink's technology for the commercial satellite monitoring market, and complements very well the company's leading position in the government and military markets."

Stellar Introduces DS100 Satellite Modem

DULLES, Va — Stellar has launched the DS100 satellite modem, designed by Stellar and Delphi Electronics & Safety, and targeted specifically for machine-to-machine applications that require data communications over the Orbcomm low-earth orbit (LEO) satellite network.

Stellar said the DS100 was developed as a robust satellite transceiver with a small footprint and efficient power consumption, making it ideal for a variety of applications including automatic utility meter reading, transportation tracking, oil and gas field monitoring, security and other applications requiring an affordable device offering highly reliable connectivity through Orbcomm.

Zvi Huber, general manager of Stellar, said the automotive-grade modem is a major breakthrough as an enabling technology in the remote monitoring and tracking markets. "With its simplicity, extreme reliability and low price point, we expect it to start a paradigm shift as new customers begin adopting Orbcomm satellite technology. We are already hearing from many companies looking to join the race. SM

COVER STORY

IPTV: Will Satellites Deliver?

By Howard Greenfield

IPTV: New Business Driver

Don't wait for IPTV. It already is happening.

If you haven't noticed yet, IPTV emerged from below the radar this year and is asserting itself as a major business driver. But can it actually influence, or even reconfigure communications operations and economics as some experts say? More importantly, are satellite players strategically positioned for the change and what can we expect to see in the coming months as the service and market maps are carved up?

The IPTV subscriber base being eyed by Telecom, Broadcast, Cable, and others will see an exponential rise from 1.9 million subscribers in 2004 to 25.3 million in 2008 according to California-based analyst Multimedia Research Group. They also project subscriber revenue growth to jump from $635 million in 2004 to $7.2 billion in just four years. As we learn more about the power of this new media enabler, we look to expert industry analysts and executives for some valuable insight on it's impact.

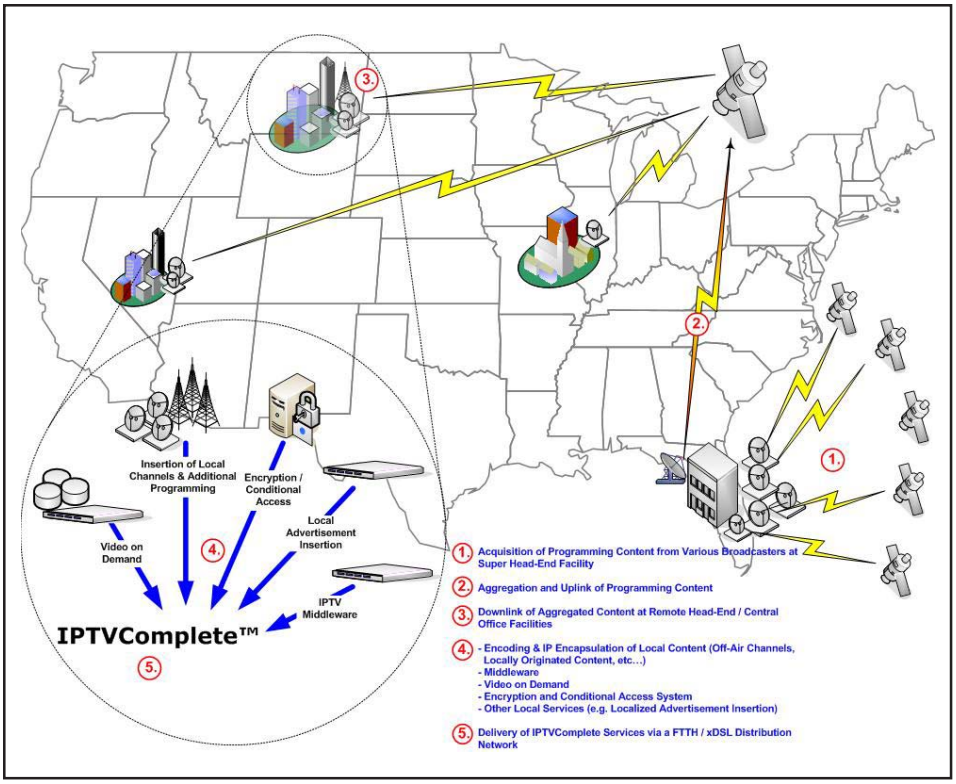
"I think it's [IPTV] a perfect fit for satellite to really take our delivery systems to the next level. It's an exciting development!"

— Bryan McGuirk, SES AMERICOM

An even more specific question is *how* satellite companies will participate in the growth. Will it be as a long-haul carrier, broadcast distributor, or provider of new interactive services? According to TDG research analyst and former OpenTV executive, Hervé Utheza, one clue is to understand that as "worldwide IPTV subscribers … pass the 20 million mark around 2010", delivery volume will be "dominated by hybrid architecture deployments, as opposed to stand-alone TelcoTV VoDSL solutions." TDG believes "the power of IP as a digital video transport technology will rapidly expand beyond TelcoTV operators to affect multiple network topologies. Satellite operators will augment their broadcast offerings with IPTV-based 'on-demand' services in order to compete with cable TV players." And the market will be hard to resist with "a compound annual growth rate (CAGR) of approximately 102% between year-end 2004 and year-end 2010."

Promising. But is satellite a beneficiary? First, consider poor man's IPTV. It's been around for some time in the form of Internet streaming. Inexpensive, if not prime-time quality, it's cheap and highly available on broadband, and even dial-up—the soon-to-be "rotary" relic of the Internet. Many ISP's support high-speed download, streaming, and sign-up for VOD services for as little as $15 a month. Next, think about the market stakes for true IPTV, and ask if anyone can resist the prize. Broadcast-quality IPTV promises industrial strength, end-to-end control for broadcasters, and broadcast-quality video viewing and interactive control for consumers. What's more, the holy grail of triple play is in the balance: video,

COVER STORY



> *"[If] IPTV takes off in earnest…and uses satellites as the transport mechanism to deliver content to the IPTV head-ends or gateways before distribution to the last mile…[it will] be a tremendous boost to the to the satellite industry."*
>
> —*José del Rosario,* Northern Sky Research

Internet, and telephone delivery through one provider.

Multiple Industries Join the Race

A race is on. Telcos, cable operators, and satellite providers are jockeying for position with a potentially enormous pot of gold at stake. The telecommunications industry's foray provides some perspective.

What's propelling the race to bring IPTV to the next level? "Fear and greed" according to SBC Communications' VP of Products & Services Jeff Weber speaking this spring at NAB. He highlights the cable industry's introduction of broadband in the past few years as a precedent, opining that the opportunity of IPTV is simply too big to pass up. Everyone's afraid of missing the boat—and dominant market share position. Another driver, Weber adds, is customer expectations for content and interactivity saying "things are moving from push to pull . . . an inversion of the provider-subscriber model".

SBC has put its money where its mouth is in Project Lightspeed, a multi-billion dollar investment that will provide IPTV, Internet access, and IP voice at 20-25 Mbs. It has been recently reported that SBC's investment in rolling out IPTV to 18 million households will amount to $4 billion in the next four years.

Another regional giant, Verizon, is also on the move. At the same NAB conference, Verizon CEO Ivan Seidenberg spoke of his company's $73 billion capital investment, as the foundation for delivering "100 megabits downstream and up to 15 megabits upstream, making FiOS [Verizon's new fiber network] the fastest, most interactive network being deployed in America today." He adds their "plan is to reach 3 million homes by the end of this year (2005) and to expand as fast as the technology and the marketplace will allow in the years ahead."

The Revolution Cometh

Many believe the satellite industry will play a critical role in the IPTV future. "The power of IP as a digital video transport technology will rapidly expand beyond TelcoTV operators to affect multiple network topologies," remarks TDG's Hervé Utheza. "Satellite operators will augment their broadcast offerings with IPTV-based 'on-demand' services in order to compete with cable TV players."

Industry experts who participated in the latest ISCe panel, "The IP Revolution: New Services, New Business Models" (June 2, 2005), also seem to be satisfied that the pieces are in place for IPTV's debut in the mass market, and for satellite to play a vital role in its deployment.

Panel moderator Bruce Elbert, president of consulting firm Application

COVER STORY

Jonathan Feldman, GlobeCast America

Technology Strategy, Inc., reasons that IP-enabled VSATs offer a solid solution to the "last mile" problem by providing high-speed access from almost any fixed or mobile platform. Elbert also used the panel to point out that the broadcast power of GEO satellites is being exploited to distribute IP-formatted content to small antennas at retail locations over a wide region.

Another ISCe panel participant, SES AMERICOM's vice president and general manager for enterprise solutions, Brent Bruun, indicated they have already entered the race to deploy IPTV. He spoke of their move to reconfigure the resources of recently-purchased Veristar teleports to offer three classes of IP services to their commercial and government clients.

And Jonathan Feldman, senior vice president, GlobeCast America, reviewed the new IP-based hybrid satellite-terrestrial platform that GlobeCast is using to transport video streams and files from almost any location.

Last but not least, the panel reviewed the progress made by Hughes Network Systems in expanding the bandwidth and service features of DirecWay. William Lindsay, senior program manager of Hughes Network Systems, spoke of the new DW 7000 series of products that his company recently introduced. He and other panel members addressed concerns about performance issues like latency and security of VSATs. They concurred that the current breed of VSAT hardware and software provide a user experience on par with DSL or other terrestrial alternatives.

COVER STORY

Todd Daniels, 1-EagleBroadband

Commercial Offerings

SES Americom is bullish on satellite's role in IPTV and how the Veristar acquisition has upped their game. "We inherited a great IP engineering work force that's really improved the IP DNA of our team here at Americom" explains Bryan McGuirk, senior vice president of SES Americom's North American Media Services. "It's enabled us to get a head start in all these new applications. It is transport, it is delivery, but it's the applications surrounding that which really have blossomed for us."

McGuirk explains his view of satellite's opportunity: "The IP play is a watershed moment for the satellite industry. We've been in the video business for 30 years delivering cable neighborhoods for major programmers. A proper analogy might be that we've been long-haul trucking for the past 30 years on a linear network. We're now moving to a new paradigm, similar to a Federal Express model—where you have delivery on a time-table, with receipts. It's a much more precise kind of delivery—and IP enables that. That's why I think it's a perfect fit for satellite to really take our delivery systems to the next level. It's an exciting development!"

IP Prime is SES Americom's newest offering. It provides an aggregation platform combined with an encoding and transport function to deliver IP video to Americom's cable and telco industry customers. McGuirk sees this kind of hybrid partnership as a great opportunity for the satellite industry: "Many are looking for a cost-effective transport means to serve this new IPTV market and our new platform is serving as a timely solution to the need. We are excited about the potential for this new market …[We've] put a tremendous amount of work into it…We want to get it out the door first."

On the other hand, while seeing IPTV as a viable new market for Satellite, Northern Sky Research's Jose del Rosario, Senior Analyst and Regional Director, Asia-Pacific, cautions that "it is a niche market on a country-by-country basis that has a limited number of players that each country market or regional market can bear."

Regarding the transport function, Rosario believes that in the U.S. "the satellite play is likely to be a transport mechanism for second and third tier telcos serving outside the coverage of tier one players. Since the Regional Bell Operating Companies (RBOCs) have decided to deliver content to their 'headends' using their existing fiber infrastructure, the satellite play will be the delivery of content to the 'headends' of the tier 2 and tier 3 telcos."

COVER STORY

GlobeCast is also optimistic in the push for the satellite industry's role in IPTV, envisioning thousands of channels offered and significantly increased demand for DBS video distribution. GlobeCast also sees hybrid distribution channel model as the smart choice for the satellite industry. True hybrid networks that use satellite and fiber bring video to the end-user and provide "a very flexible format" explains Jonathan Feldman, Senior Vice President, Business Development GlobeCast America. It acts as a "central aggregation point for the content, [with] re-distribution by satellite as an IP signal to a customer location." He adds, "What we call the 'remote head-end' is a receive system that we put at that customer's head-end location, so that we've moved the content to the customer, which could be a telco, or a green-field community."

Feldman emphasizes the primary focus is providing "value for the end-user. So, we are in the service business and not just uplink in space. Our play is to provide content management capability to our customers to give them the control of the content and what they do with it. In essence, more and more, [we] help them improve their work-flow process . . . in the form of tools they can use. The other 'win' is by being more efficient in the workflow and distribution process; then they can improve their ROI.".

GlobeCast's IPTV Complete product partner, Eagle Broadband, puts in context their role as an MSO that has negotiated specific IP content transport and distribution rights. This "allows the broadcast of video content over Internet Protocol by guaranteeing security and quality standards to the broadcasters and studios", comments Todd Daniels, Eagle's vice president of sales. "IPTV Complete offers a chance for Eagle to expand the service offering nationwide through partnering with local service providers that need

video content to complement the voice and data networks they operate. By using the economic advantages of the satellite distribution, with the comprehensive engineering of IPTV encoding, encapsulation, encryption, middleware and STB's, the solution makes sense for emerging IPTV providers."

Nobody's Waiting

IPTV deployment is gaining momentum every month, and industry consensus is that it will benefit the satellite business. However, not so clear is the details of they hybrid infrastructure and partnerships. Who will own and deliver the services, and what twists and turns will the industry and public experience on the road to mass markets?

Though experts agree on the hybrid deployment model, the challenge faced by satellite will be brokering deals and system integration with the telcos and other head-end operators through strong financial incentives that leverage the use of transponders to transmit content. This shared-distribution model will ensure a better place at the table for satellite IPTV delivery. "On the positive side, IPTV takes off in earnest in countries outside the United States and uses satellites as the transport mechanism to deliver content to the IPTV head-ends or gateways before distribution to the last mile," comments Del Rosario of Northern Sky Research. "This will be a tremendous boost to the to the satellite industry."

Of course, there are other considerations. Where content is king there will be a tax for protective walls and motes. Del Rosario conjectures security could be one of IPTV's stumbling blocks: "On the negative side, the owners of content become very concerned over piracy, since IPTV will be delivered using an Ethernet connection, and completely disallow or demand large restrictions on content distribution. The features that IPTV brings to the table that are, or are envisioned to be, superior over DTH and Cable TV packages do not come into play."

One certainty: competition for IPTV market domination will remain fierce as extraordinary resources continue to be funneled into its mass capitalization. The satellite industry is poised to reap significant rewards if it can foster the right technical innovation and necessary commercial partnerships. But if you're waiting to read the waters and figure when to jump in, *fugettaboutit*. Nobody's waiting for IPTV. It already happened. SM

Howard Greenfield has held senior executive and consulting positions with Sun Microsystems, Informix, British Telecom, Europe Online, and Apple Computer, where he worked in the Advanced Technology Group. Mr. Greenfield is a frequent contributor to industry publications. He received his Master degree from Stanford University. Howard Greenfield can be reached at howard@go-associates.com

FEATURE

European Satellite Radio Battle Begins

WorldSpace prospectus admits "deficiencies"

Rival Europa-Max targeting "Christmas 2008" for service

By Chris Forrester

For the past couple of months it has been clear that interest in a Euro pean satellite radio service is greater than at any time since the Global Radio collapse of a few years ago. First out of the gate is Washington-based satellite radio provider Worldspace, which unveiled its IPO prospectus April 13 to raise a reported $100m. Its FCC filing was candid in displaying its past losses, while at the same time Worldspace – not for the first time – promised wonderful riches, this time for its new investors. One DARS sector observer, begging anonymity, said that Worldspace founder Noah Samara had "pulled off another Houdini escape". The prospectus stated Worldspace's two satellites, after more than 6 years of operation, had still only garnered 53,000 subscribers.

We also now know that WorldSpace wants to launch a second European satellite to supply a service similar in scope to the USA's XM Satellite Radio, and then a third satellite to fulfill its European "developing nations" mission. We can also reveal there are at least three other consortia, each with advancing plans to launch services above Europe. First, although still at a very early stage, is Europa-Max, a consortium said to be backed by private UK, US and Luxembourg investors, which is looking to launch a Sirius-like Highly-Elliptical Orbit (HEO) spacecraft operating a S-DMB (for Digital Multimedia Broadcasting) system over Europe. The satellites would be capable, subject to frequency approval, of supplying S-DMB transmissions. The Europa-Max consortium has within it "several" individuals associated with the former Global Radio project.

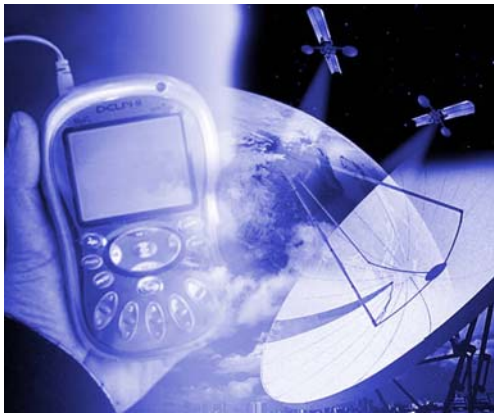
Perhaps the biggest question mark is where SES Global sits within these options? It doesn't appear that SES is locked into the Alcatel/EADS "S-DARS" consortium, or any other "S-DARS" consortium. SES seems to be for the moment to be still sitting on the fence, although everybody seems to be wooing SES to join their particular S-DARS/S-DMB project.

As far back as June 2003, at the time of WRC-03, an early move was made with the ITU (via a Luxembourg filing) for a HEO S-DMB/S-DARS satellite system. Europa-Max says it believes that its regulatory approach neatly circumvents several of the major ITU and European (CEPT) level regulatory obstacles which the now defunct Global Radio faced some 3 years ago when trying to raise financing a HEO-based S-DAB system in the 1.4 GHz BSS(S) frequency bands. A Europa-Max

The European radio rivals:

PLAN 1:	WorldSpace (and possibly Alcatel)
PLAN 2:	Europa-Max, Luxembourg
PLAN 3:	Ondas, Spain
PLAN 4:	Alcatel, Astrium, Fraunhofer, MSV*
Studying:	SES Global
Testing:	Eutelsat/ESA

*Mobile Satellite Ventures
Data: Inside Satellite



insider said: *"Various proprietary studies have shown that a HEO based system is far more cost-efficient for delivering pan-European satellite radio services than any other satellite architecture given the high latitude zones spanned by the key markets of Europe, and since a HEO satellite system needs relatively few terrestrial repeaters."*

Our source suggested that Sirius in the US had proved that HEO-based satellite technology is an entirely feasible architecture and capable of delivering a high quality service over the US (CONUS) with less than 150 terrestrial repeaters. "The Sirius-like HEO approach is therefore ideal for Europe, much of which is higher in latitude than the US. It does not seem sensible (to us at least) to go round trying to get licensing and spectrum approvals for potentially thousands of terrestrial repeaters across Europe if it can be avoided through use of a HEO architecture." Europa-

FEATURE

Max says, based on their discussions, it is clear that a number of US and European satellite operators, aerospace companies and media players are actively looking at how to commercially develop S-DMB/S-DARS in Europe, "especially given the take-off of XM and Sirius satellite radio services (S-DARS) in the US (some 6 million subscribers to date) and the emergence of new satellite multi-media broadcast services (S-DMB) over Korea and Japan".

Our Europa-Max source added: *"We believe we are well placed to bring together a consortium of European and other companies to take this project forward to offer a mix of subscription-based digital multi-media, digital radio and other services. We also expect that a competing consortium will emerge to take a XM-like geostationary (GEO) satellite system approach forward in Europe, most probably in the 1.4 GHz BSS(S)/S-DAB frequency band; such a GEO-based consortium could well be centred around an already announced WorldSpace-led initiative and could well involve one or other European aerospace players."*

Europa-Max's content plan

One of the major practical considerations to be overcome by any Europe-wide project is handling Europe's myriad languages. Europa-Max says, in addition to providing a pan-European bouquet, it will be concentrating its activities on the following language-defined markets with some 30-50 channels in each bouquet:

- English (UK, Ireland)
- German (Germany, Austria, Switzerland, Benelux)
- French (France, Benelux, Switzerland)
- E. European (Poland etc)
- Italian (Italy, Switzerland)
- "Iberian" (Spain/Portugal)
- Scandinavian (Norway, Sweden, Finland, Denmark)
- Russian

Data: Inside Satellite

Europa-Max is now actively building its wider consortium. Details are yet to be revealed. Nevertheless, it seems Europa-Max is actively seeking to take a lead in Europe with satellite-based digital radio and multi-media service delivery, and is talking to the media and motor industry as well as the satellite industry, about its plans. However, Europa-Max is also contemplating some interesting new services, not least having

Europa-Max: Q&A

Satmagazine.com posed a number of questions to Europa-Max. Their answers are interesting:

What are your business objectives?

"The heart of our business plan is the delivery of subscription based S-DMB service to vehicular-based and other mobile customers across the major part of Europe. This will involve a mix of mobile video services, digital radio services and ancillary multi-media and telematics services. Our current timetable anticipates introducing the S-DMB service in key first phase rollout countries by Christmas 2008."

"We believe the climate is right for this. The XM and Sirius S-DARS service has taken off in the US with about 5m subscribers to the present time. We also know that over Japan/Korea an S-DMB service has been introduced this year. There is significant interest in Europe in delivering mobile video and multi-media services by a number of platforms. Most observers would agree that the satellite platform is inherently more cost efficient than terrestrial platforms for providing wide-area coverage of multi-media services across the European market zones."

"We believe it would be feasible in one space-segment implementation/spectrum access scenario to provide between say 200-250 digital radio channels aggregated across Europe, if the entire space-segment capacity was devoted to a digital radio service. While there might be some doubting-Thomas's out there, we are convinced that our selected HEO satellite architecture is ideally suited for delivering a high QoS S-DMB service across a pan-European footprint."

Why a HEO-based architecture?

"Various proprietary studies have shown that a HEO based system is more cost efficient in the medium to long term for delivering pan-European satellite radio

FEATURE

a dedicated "return link" from the vehicle to the satellite, probably via a GPRS link, but also possibly directly to the satellite via mobile satellite links allowing for data services to piggyback onto radio broadcasts to vehicles.

SES wants MSS/DARS action

Satmagazine.com understands that SES is maintaining a very close watching brief on the whole question of DARS, and satellite mobile services in general. Romain Bausch, earlier this year, made no secret of SES Global's enthusiasm for mobile satellite services, and SES has been studying the sector for some 2 years. Bausch, speaking on March 23, said SES was considering an entry in the mobile services sector, and even stated that an investment in Inmarsat might make commercial sense.

Bausch also spoke at the time about the work being done by Virginia-based Mobile Satellite Ventures and a second-generation project called TerraStar that could be used with ground-based repeater amplifiers in order to build a network. Mobile Satellite Ventures is reportedly already working with EADS/Astrium, and others, on satellites with giant mesh-antennas.

SES, naturally enough, has strong and well-established links with the Luxembourg government, which is already a "golden share" investor in SES, and SES considers it has strong rights to Luxembourg's MSS filings (made in June 2003). *Inside Satellite* sees SES as biding its time, researching the market and its associated technology while at the same time seeking potential partners, perhaps also looking at a much wider picture for mobile opportunities.

Bausch, speaking in March, said: "We are looking for specific applications like digital radio. Is it using existing frequencies such as those in use by Inmarsat, or new frequencies like some of those being considered in the US?"

SES has cash aplenty for the right sort of project, but would seemingly only want to work with an organisation that had sound experience of selling to and maintain strong links with subscribers. This more or less rules out WorldSpace. Nevertheless, WorldSpace (WS) maintains its strong hold over European orbital frequencies. But past losses must place a question mark over future ventures. In its recent IPO prospectus, Worldspace admits the challenges of some of its past investors, notably "three members of the Bin Mahfouz family, [and] Mohammed H. Al-Amoudi and Mr. Salah Idris, all of whom are Saudi Arabian citizens, have been the subject of allegations that they and/or charities they were involved in have supported terrorism, and three of these investors have also been named, along with a number of Saudi Arabian government officials and prominent Saudi

services than a GEO based satellite architecture given the high latitude zones spanned by the key markets of Europe. This is because a HEO satellite system needs far fewer terrestrial repeaters to 'gap-fill' the satellite signal than a GEO system. One published study suggests that about 3000 terrestrial repeaters will be needed for a GEO S-DARS system to provide European coverage."

"Sirius, for example, has proved that the HEO-based technology is entirely feasible and capable of delivering a high quality of service over the US (CONUS) with less than 150 terrestrial repeaters. XM on the other hand has deployed to date about 900 terrestrial repeaters at a reported cost of over US $260m to provide complementary coverage for its GEO S-DARS system over the US. In Korea, the operator of the GEO MBSAT S-DMB system is reported to expect to spend about US $240 million to deploy terrestrial repeater across the major cities of Korea. If we assume a similar amount will be needed to cover Japanese cities, one can reasonably assume that about US $500 million will be needed to implement terrestrial repeaters across Japan and Korea. There are more cities and towns in Europe than in Japan and Korea. Much of Europe is also located at higher latitudes than USA, Korea and Japan. All these factors clearly point towards the use of a HEO-based architecture for developing a S-DMB service for Europe."

"We also think deploying a GEO-based system would be like climbing a regulatory Mount Everest in order to obtain the necessary regulatory approvals for terrestrial repeaters. *It does not seem sensible (to us at least) to go round trying to get licensing and spectrum approvals for potentially thousands of terrestrial repeaters across European cities and towns and have to deal with up to 25 or more European national regulatory authorities and scores of local planning authorities, especially if such a bureaucratic, time consuming and potentially expensive regulatory process can be avoided through use of a HEO architecture."*

What regulatory steps have been taken?

"As far back as June 2003, we made an early move at the time of the ITU WRC-03, to file to the

FEATURE

Delphi 2 Go unit

Arabian citizens, in civil actions brought on behalf of victims of the September 11, 2001 terrorist attacks on the United States."

Over the past five years alone WS has burned its way through net losses at an average of $334m a year, with last year's massive net loss of $577m topping off an amazing run. By any measure, sales income has been dismal, averaging just $9m per year over the past 5 years. WS finished last year with declared total assets of $649m, including its orbiting and grounded satellites, set against total liabilities of a thumping $2.338bn, prior to the financial adjustments already mentioned.

Worldspace's revenues*

2000	$3,683,000
2001	$10,114,000
2002	$9,589,000
2003	$13,074,000
2004	$8,581,000

*Data: *Worldspace prospectus*

Worldspace say they have sourced almost half their current subscribers from India (22,000). The prospectus says WS is now "able to roll out our subscription service on a sequential basis in the markets we find the most attractive, subject to obtaining any required local regulatory approvals. The main limitation, historically, to our ability to roll out our service and acquire subscribers has been our limited access to capital." Worldspace's statement regarding their "limited access to capital" might raise some eyebrows, especially given the vast sums spent around the world on "market-

FCC Filings:

(1) Objections to "devastating" WorldSpace plan

WorldSpace is attempting to gain access to Europe via a "replacement" satellite (AfriStar 2), and using the craft specifically for a DARS-type service. One of the emerging European consortia, Madrid-based ONDAS, filed a strong objection to the WorldSpace plan on April 18, 2005, and also spoke of meeting with the FCC to argue its own European case.

WorldSpace's plan is predicated partly on the technical problems of its existing AfriStar craft. Initially rejected by the FCC because AfriStar 2 was "a new satellite", WorldSpace filed an amended plan on March 18, 2005. Ondas, in its FCC objections, describes AfriStar 2 as a craft designed to exploit S-DAB spectrum over Europe. "Either way," implies Ondas, "this is European spectrum and should not fall under the FCC's jurisdiction."

Ondas says it recognises that the FCC can provide for a pure replacement satellite with characteristics that echo the original craft. "Here," says the Ondas filing, "there is no doubt that AfriStar 2 is not a replacement satellite." Ondas explains that AfriStar 2 has contour beams biased towards Western Europe with limited African coverage, and the opposite of AfriStar 1, which is focussed on Africa but with some spill-over into Europe. "This is nothing more than an attempt by AfriSpace (WorldSpace's filing company) to use the FCC to get a foothold in Europe." Further, Ondas questions whether the FCC should even be licensing BSS systems, which do not serve the USA.

The Ondas FCC filing explains its approach to DARS over Europe. Ondas says it seeks to establish a HEO S-DAB system, and if the FCC "approves" the WorldSpace (GEO) application then that decision would have a "devastating" impact on Ondas' plans and would create "significant jurisdictional issues" between the US and Europe.

FCC Filings:

(2) Worldspace's response to Ondas

In May Washington-based satellite radio operator WorldSpace submitted a withering attack, via the FCC, on newcomer Ondas of Madrid, Spain, a would-be entrant in European satellite radio space. WorldSpace admits that AfriStar 2 would have a greater coverage area than its predecessor, but the FCC could still approve its plan because "no other satellite operators have been licensed to provide Broadcast Satellite Service (sound) services in the area in question…." WorldSpace describes the Ondas "Petition to Deny" filing as "highly selective, misleading and a blatant misrepresentation of FCC policies…..[and that] Ondas is a disgruntled would-be competitor that would like to capitalise on the development of the satellite radio market by WorldSpace and others over the past 15 years."

WorldSpace also grumbles to the FCC that it had not been properly informed of the Ondas filing, itself potentially a breach of FCC rules. WorldSpace told the FCC that while AfriStar 2 was very much a replacement craft for the ailing AfriStar 1, it was part of a longer-term and two-phase replacement strategy which included a 3rd satellite which would also be launched "before AfriStar 1 is fully retired" and satisfying the existing non-European beams.

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ing" their existing service. WS "cost of revenue" expenditure included engineering and broadcast operations ($8.3m last year), content & programming ($2.6m), customer care, billing and collection ($488,000) and "other" costs ($3.3m). But that's not all. WS specific operating expenses show an additional (to their "cost of revenue") spend on "selling, general and administrative" of an average $44.5m over the past five years, and $32.76m last year.

Worldspace revenue analysis ($000)*

	2003	2004
Subscriptions	226	1,038
Capacity leases	3,449	2,002
Gov't services	5,636	1,945
Receiver sales	1,942	1,704
Other	1,821	1,892
TOTAL	13,074	8,581

**Data: company*

Worse – and perhaps part of the overall tidying up of their balance sheet – there's a huge "stock-based compensation" charge for 2004 of $90m, or an equivalent of $1698 per current subscriber. In one of the usual "Risk Factors" that such documents contain, Worldspace unusually admits that it is short-staffed, especially in terms of accounting staff, including the replacement of a CFO (Ron Johnston "employment terminated in September last year") and other senior financial staffers. They admit that their independent auditors have identified "material weaknesses and significant deficiencies" in its Internal Controls, and that it may not be compliant in terms of Sarbanes-Oxley.

Eighteen months ago (in 2003) WorldSpace said they had just 15,000 subscribers paying typically $1.70 a month. By the end of last year this had grown to 40,000 subs paying $3.00 a month. However, lease payments dried up last year, "as a result of a reduction in the

XM Dash unit with cassette

number of broadcasters contracting to use our capacity…" Moreover, the prospectus states that WS has increased its reserve for bad or doubtful debts on capacity leases to $700,000 ($300,000 in 2003). Of course, WS sells radio receivers to people other than subscribers, and last year it benefited to a total of £1.7m, down 65% on 2003. The "other" element on the income side of the business included advertising revenue and ad-based barter activity. "The net proceeds from the sale of our XM interest, net of our initial

ITU through Luxembourg for a HEO S-DMB / S-DARS satellite system in ITU allocated Mobile Satellite Service (MSS) spectrum at L-band and at S-band. We have consolidated that early filing by making follow-on ITU filings which places the planned HEO satellite system in a very good position in the ITU's 'coordination queue'. The use of MSS spectrum is ideal for introduction of S-DMB services, given the availability of adequate MSS spectrum both at L-band and at S-band, which is not encumbered or constrained by existing and actual MSS commercial operations."

"We believe our regulatory approach neatly circumvents several of the major ITU and European (CEPT) level regulatory obstacles which the now defunct Global Radio faced some 3 years ago when trying to raise financing a HEO-based S-DAB system in the 1.4 GHz BSS(S) frequency bands. These obstacles included the existence of an ITU Radio Regulation called RR 22.2 which gives existing and planned GEO BSS(S) / S-DAB systems in effect a 'super-priority' over any HEO BSS(S) / S-DAB system. This was like having a Damocles Sword over the neck of a HEO S-DARS proponent. It was very difficult for Global Radio to achieve funding for a •1 billion project with such a clear and present regulatory risk. This risk still remains. This ITU provision might be changeable at WRC-07 in November 2007, but that seems to us a bit too long to wait to make major investment decisions."

"We also understand that WorldSpace is planning to implement a GEO S-DARS systems, called Afristar-2, in the 1.4 GHz BSS(S) frequency bands. It also appears that Alcatel are proposing a GEO-based S-DARS system in the same frequency band. *We therefore expect that a competing consortium will emerge to take a XM-like GEO satellite system approach forward in Europe, most probably in the 1.4 GHz BSS(S) / S-DAB frequency band; such a GEO-based consortium could well be centred around the already announced WorldSpace-led initiative and could well involve one or other European aerospace players. In our opinion, there is simply not enough spectrum available in the European (CEPT) designated S-DARS / S-DAB frequency band of 1479.5-1492 MHz (i.e. 12.5 MHz) to viably accommodate*

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investment of $144.0 million, was approximately $51.0 million," says the prospectus. Heaven knows how much Worldspace's founders stake in XM would be worth today! Instead Worldspace has burned its way through $497.7m in operating expenses, including personnel costs, property, travel…….

Noah Samara lighting up after the successful Launch of AfriStar

Worldspace's European hopes

WS says Europe's "significant opportunities" for mobile DARS might also be hampered by the fragmented and diverse nature of the European market. However, it is "continuing various business development activities" with Peugeot-Citroen "that foresee the integration of DARS receivers in their vehicles". However, the prospectus warns potential investors of the usual risks involved in such a venture, and that other factors may damage it potential success. One such risk is the entry into the market of competitors. *"Although a number of countries have since submitted filings to the ITU for potential use of the same unique L band frequencies allocated to satellite radio,* ***we are not aware of any commercial undertakings*** *to offer L band satellite radio services. While new competitors could emerge, particularly if our service proves to be a commercial success, any potential satellite users of the L band are required to protect our receivers from harmful interference. Moreover, our two satellites currently occupy most of the L band spectrum allocation in our target regions,"* says the prospectus.

To disclose here the entire complex inter-company elements of Worldspace's financial restructuring would take as many pages as the FCC S-1 filing (which we urge readers to examine). However, the current bottom line is that Noah Samara (and his brother Eyob) between them control 91% of the pre-reconstruction Common Stock in Worldspace.

WorldSpace launch history

AfriStar	launched October 1998
AsiaStar	launched March 2000
AmeriStar	Stored at Toulouse (AfriStar 2?)
Flight 4	AfriStar 3

European interest in satellite-delivered radio is now a proven fact. Quite which outfit wins the prize is still open to question. Whether that operator can sell the concept to consumers is a huge question. But attempting to match XM's rapid achievement of 5m subscribers is a temptation few could resist. SM

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

both a GEO S-DARS player and a new HEO S-DARS player. It will very hard for any new HEO S-DARS proponent to break into the 1.4 GHz BSS(S) band to obtain sufficient spectrum given the existing regulatory framework; this is one reason we have selected the use of MSS spectrum for our HEO system."

"We obviously have more work to do to progress the regulatory activities, but we believe we have established a firm foundation for this project to proceed."

What is the funding looking like?

"We are still at the start-up phase. We have recently come to an agreement with one of our sponsoring parties which will enable a major capitalization step for the Luxembourg company to a high 7 figure • level. We are working through the details at this time. Our primary target is to close a funding round in excess of • 350 million by end of 2005 in order to progress the major procurement activities. We have been talking to a number of European and US satellite operators and media players. There is clearly interest in major organizations to develop S-DMB / S-DARS services in Europe. Our intention is to bring together a core group of investors during Q3 / Q4 2005 to enable this project to proceed and to achieve its funding objectives. We are confident that this will happen and that the shape of EUROPA-MAX will evolve in the coming the months." SM

COUNTRY PROFILE

Bridging the Digital Divide in Colombia

By Bernardo Schneidermann

Colombia is a developing country in South America wracked by internal strife in the 1990s. Since 1999 a government program called Compartel has been bridging the digital divide in this country by leveraging satellite technology.

The Colombian government through the Ministry of Communications jointly with the FONADE (Development Project Financial Funds) established the Compartel program in 1999. The Program focus was to use telecommunications for social and economic development. The program was targeted to expand the coverage of telecommunications services in rural areas and low income areas with the aim of providing Rural Telephony and Internet Access to remote and underdeveloped regions of the country.

The Compartel program has two main project components :

- Community Rural Telephony program
- Social Internet Program

The main objectives of the Compartel program are:

- To provide incentives for business plans, rather than finance the purchase of equipment.
- Competitive bidding and efficient allocation of resources.
- Contribution in exchange for installation, operations, and maintenance over a 6 or 10 year period.
- Development at the operator's own risks and expenses.
- Tariffs fixed by the Communications Foundation.

COLOMBIA: Facts and Figures

Location: Northern South America, bordering the Caribbean Sea, between Panama and Venezuela, and bordering the North Pacific Ocean, between Ecuador and Panama

Area: *total:* 1,138,910 sq km

Area - comparative: slightly less than three times the size of Montana

Population: 42,954,279 (July 2005 est.)

GDP: purchasing power parity - $281.1 billion (2004 est.)

GDP - real growth rate: 3.6% (2004 est.)

GDP - per capita: purchasing power parity - $6,600 (2004 est.)

Telephones - main lines in use: 8,768,100 (2003)

Telephones - mobile cellular: 6,186,200 (2003)

Radio broadcast stations: AM 454, FM 34, shortwave 27 (1999)

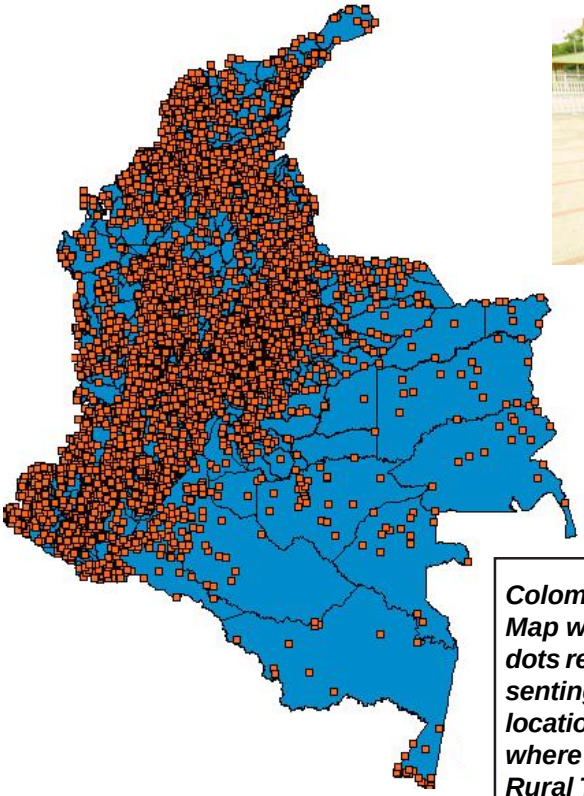
Television broadcast stations: 60 (includes seven low-power stations) (1997)

Internet hosts: 115,158 (2003)

Internet users: 2,732,200 (2003)

Source: CIA World Factbook

COUNTRY PROFILE



Technology Used
VSAT : 7.787
Cellular : 1.795
WLL : 163

Colombia Map with the dots representing the locations where the Rural Telephone services was Implemented

- Free choice of technology.
- Bid is awarded to the bidder that requested the lowest contribution from among the bidders who met the technical and financial requirements.

The Compartel program aims to reach this goal by installing Community Rural Telephony Points and Telecenters in rural locations and towns.

The community Rural Telephony Program was the first to be implemented and the criteria was the following:

- Rural localities where telephone service does not exist
- Population greater than 150 inhabitants
- Area without telephone service in a radius of 4 km.

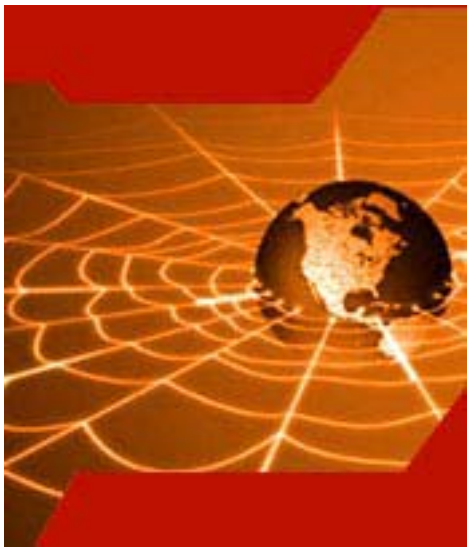
Status of the Program in 2005:

- All towns and populated centers are now covered.
- The Program covers the installation, operation and maintenance of 9.745 community rural telephony points in the same number of rural localities.
- Stage I: 6.745 points installed by Gilat Colombia S.A.
- Stage II: 3.000 new points installed by Gilat Sat. Net works Colombia S.A.
- Beneficiary Population: approximately 5.3 million people in rural areas
- 12.798 Rural Telephony Lines
- Investments of US$ 51 million

The Social Internet Program was implemented to disseminate the use of the information technology through the use of Internet and the criteria was the following:

- Allows the use of Internet in all towns of the country
- As well as the country's major Population Centers (with more than 1,700 inhabitants

COUNTRY PROFILE



Status of the Program in 2005

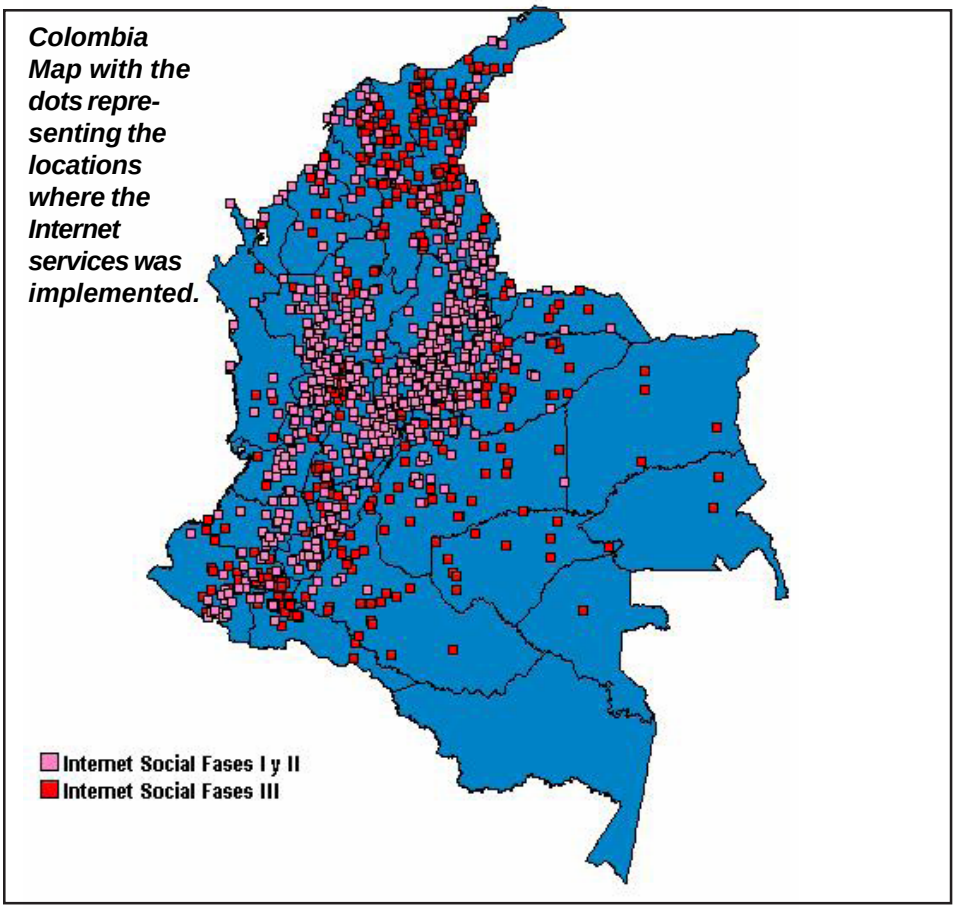
- All metropolitan areas of the towns will be covered by 1.097 telecenters
- 359 telecenters have been installed in rural areas with more than 1.700 inhabitants.

Stages:

- Internet Phase I: 670 installed by Gilat Colombia S.A. (100% VSAT)
- Internet Phase II: 270 installed by Telefonica Data Colombia
- Internet Phase III: 550 installed by Gilat Networks Colombia (100% VSAT)
- Also: 40 locations with Local Switched Internet Access.
- Beneficiary population: aprox. 5.2 million persons
- Investments US$ 102 millions

A new program was developed in 2004 to provide Broadband Internet Access for Government Institution, Educational Institution, Hospitals and City Halls and have the following goals:

COUNTRY PROFILE



Colombia Map with the dots representing the locations where the Internet services was implemented.

The Compartel Program is one of the broadest and most ambitious in Latin America. Is a clear example of the efficient use of available resources and satellite technology. With the implementation of Compartel, Colombia is effectively using information technology to promote economic development and competitiveness.

With the Compartel program, the Colombian Government is reducing the gap between those who have access to information and those who do not have, by rapidly adding the most isolated regions of the country to the telecommunications networks. This program facilitates governance by placing the state and its services more accessible to all citizens and Satellite and IP technology are one of the major players in the solution. SM

Phase 1: (2004-2005)

The overall project was to implement broadband access to:

- 3000 Public Schools
- 624 Civic Centers
- 120 Hospital
- 30 Military Bases
- + 1440 Educational Institution
- + 426 Civic Centers
- 57 Agribusiness Center
- 81 Health Public Institutes

The project was awarded to Redcom Ltda from Colombia.

The project was awarded to Union Temporal Comsat International and Internet por Colombia during the second half of 2004. Both organizations will implement a mix of IP Broadband VSAT and WI-Max technologies.

Phase 2: (2005-2006)

Additionally of the phase 1 the goal is to implement:

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FEATURE

European HDTV: Good news, Bad news

By Chris Forrester

Luxembourg's 6-month presidency of Europe ended on June 30, and they have used the country's long association with radio and television to use as their presidency to highlight the potential for HDTV over Europe. On June 7 Luxembourg held a ministerial-level conference in the country to look at high-definition TV, and the update generated lots of positive HDTV news from the 400 or so VIP delegates present. Top of the list was an ebullient presentation from Premiere's Dr Georg Kofler, chairman and CEO of the German pay-TV operation.

Barely two years ago Premiere was all but bankrupt, but today's operation, under Kofler's guidance, has more than 3 million subscribers – and Kofler's gut feeling is that they're ready for high-def. He told the Luxembourg audience that he didn't much care for customer surveys and statistics, he just thought that the difference of plasma or LCD widescreen flat-panel displays delivering sparkling HD images would generate the "wow" factor for German viewers. "We'll start with three channels this November, and something between 2000 and 4000 sports bars showcasing the channels, and with a year I want to be offering 5 or 6 channels, or more."

He was coy about the extra premium Premiere would have to charge, saying that at the giant IFA radio and TV fair in Berlin this August he would unveil the pricing options, but hinted that the HD channels would be available to top-tier subscribers for a few extra Euro a month. Pace Micro is supplying Premiere's boxes, which a year from now will also include high-capacity PVR functionality. Premiere has gone for MPEG4 compression (and DVB-S2 satellite transmission), and it is the MPEG4 chipsets that seemingly have everyone biting their fingernails with anxiety. Because they aren't yet around.

David Gillies, Pace's director of technology, speaking on June 7th when he unveiled the world's first IPTV-based set-top box (with an H-264 chip included) admitted that it isn't just supplies of MPEG4 chipsets that are a problem, but the ones that are currently beginning to flow are 1st Generation devices with all the challenges that implies in terms of potential bugs and problems. This is NOT to suggest that the chip manufacturers have been in any way delinquent, far from it. It is simply a fact of life that when dealing in this sort of cutting-edge technology there is bound to be some problems. "They can all be cured by an over-the-air software download, as normal, but it all takes time and effort," said Gillies.

It is this uncertainty, and shortage of

EU Commissioner Viviane Reding*

…on a twin-track high-def Europe

"It all comes down to money. Europe's new member states are not so well off, and we cannot expect individuals to invest in a new screen if they are from a low-income family, perhaps in a low-income economy. Some European countries do not have this problem and events like the soccer championship next year will be a huge driver, but not for everyone. In fact in some countries, and one could mention a market like Poland there is not so much enthusiasm for HDTV. They do not have the capacity to buy in to this new technology. So they are asking for grants and subsidies and we cannot help. "

*Responsible for Information Society and Media

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Viviane Reding, EU Commissioner for media

components generally, that has put the brakes on some broadcasters rolling out HD services this year. BSkyB, initially expected to launch this autumn, is definitely holding back until next year (although some of us still expect some sort of 'promotional' channel to be on air in HD later this year). Canal Plus' chief technology officer Joseph Guegan, told the Luxembourg conference that they needed to be absolutely certain that set-top box suppliers were robust as well as technically capable of handling MPEG4 signals. He said they would have a promotional channel on air this summer (using MPEG2) purely for demonstration purposes, and in October build the promo channel into a full-fledged service in MPEG4, however there would be no official launch until "after April 2006" when there would be a "progressive launch of a satellite bouquet of up to 5 channels".

HDTV, from Canal Plus

"We have a window, but we don't want to be throwing money out of that window…"

Joseph Guegan, chief tech. Officer, Groupe Canal Plus

Canal Plus in Scandinavia (where the brand is in fact owned by the SBS Broadcasting outfit) has announced it will launch a HD channel on September 1, and there are also reports that Sky Italia will have a service on air during 2006. It is the same with Television par Satellite, the 'other' French pay-TV platform, now expected to launch early in 2006 (almost certainly about the same time as arch-rival Canal Plus).

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Market research specialist EuroConsult is also forecasting a bullish future for high-def in Europe. Managing director Pacome Revillon says Europe, like the USA, Japan and Korea is well prepared for HD. "The HD Ready label is now appearing on TV sets, and the promotional activity is beginning. New, flat-panel displays are fashionable, desirable objects, and they are already selling well." His company predicts a rapid take-up of HD receivers in Europe, and in a report being issued in July suggests that while Black & White sets took 25 years to reach 80% penetration in most major European countries, and Colour took 21 years to hit the 80% mark, then HDTV is only going to take 15 years to reach 80%.

Moreover satellite will take the lion's share of this growth. EuroConsult say that by 2010 Europe will have between 60-100 HDTV channels, helped by low initial investments. Cable and DSL have "limited availability of bandwidth; [and] cannot reach the diversity of satellite without large investments." Nevertheless, Revillon talks about 20-40 high-def channels made up of mostly public-broadcasters and limited PPV offerings being available by 2010. But for digital terrestrial transmission the news is nothing short of catastrophic, with only "a few channels potentially offered in 2010-2012, depending on regulatory decisions."

Kofler agreed that while satellite is clearly steaming ahead, and wholly exploiting its window of opportunity, other delivery mechanisms are well behind. "Cable is in a mess," he argued. "Everything is so slow," and cited the morass of regulation he has to face in Germany especially between the assorted operator and Lander (Germany's federal states) bureaucracy. This was confirmed by Amsterdam–based UPC's SVP of strategic marketing Doron Hacmon, who said his company is optimistic about UPC, Europe's largest cable player with some 15m cabled homes, but he admitted that even converting the UPC networks for HDTV in the Netherlands would take "at least 30 months". Europe's telcos and cable companies are equally enthusiastic about HD, and are looking at ADSL delivery, helped by the newly-available D-SLAM ADSL2+ technology, as well as MPEG4 (or Microsoft's VC-1 codec) to squeeze high-def channels to homes many miles away from their exchanges. But ADSL2+ is emerging technology, and part of the "likely" plan for the future.

Dr. Georg Kofler

Unfortunately, this is also the state of play with digital terrestrial TV. One of these days Europe's local regulators will carve out some spectrum for HD, but in most cases viewers will have to wait until analogue TV is switched off. Indeed, Viviane Reding, EU Commissioner with responsibility for media, admitted that DTT bandwidth was precious, but that hoped that broadband vendors would start offering more TV-based services to fill the gap.

Bjorn Erichsen, director the EBU's television department, threw up another few HD problems, perhaps bearing in mind the EBU's strong public broadcaster membership. He said there was no need to cover this year's recent Eurovision Song Contest in high-def, and wondered – again with Central and Eastern Europe's membership to mind – whether even next year's would be worth capturing in HD. "It is the same with documentaries, and news coverage. I am not sure we need HDTV to tell a documentary story. It is the same with 'fly-on-the-wall' documentaries. How will broadcasters handle shooting in difficult conditions? Pictures must not overshadow the story," he argued at Luxembourg. "There's really no need for HD in news and current affairs. Who wants to see ultra-sharp images of the Dharfur (Sudan) atrocities, or the dead in Baghdad? Do we need this?"

Erichsen added that he wondered whether soap operas and other high turnaround productions needed HD. Developing his doom and gloom theme he also questioned whether film schools, up until now knowing that their students would be working in celluloid, were giving enough attention to the importance of lighting in HD productions.

His comments did not go down well, provoking a strong counter-argument from most of the (perhaps justifiably biased) audience. "The viewer wants image quality, said Gabriel Fehervari, CEO at AlfaCam and the pioneer broadcaster behind Euro1080's HDTV transmissions. He told delegates that his company started shooting in HD back in 2001 with just 8 suitable cameras and one OB truck. "Now we have 108 high-def cameras, and 12 high-def OB trucks. This year we are already committed to more than 500 HD productions." Fehervari said Euro1080 will expand this summer to include HD2 and HD5 – with more than a hint that the numbers in between will soon be filled. While Euro1080 has mostly concentrated on sports events and concerts, Fehervari said there's a growing interest in documentary shooting, and plenty of regional and local footage being captured in HD.

Marc Valentin, executive president of Thomson/Grass Valley, said they were experiencing real interest in HD from former Eastern Bloc countries, many still operating in Soviet-era analogue who were looking to leap-frog 'ordinary' digital

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and instead adopt HD with MPEG4 compression and thereby bypass completely one stage in the evolutionary process. “More than 50% of all our cameras sold are now HD format,” he said.

There’s another grumble, again directed at the European Union, that few broadcasters would argue with a and it came from Frederic Sichler, general director at film-makers Studio Canal. Studio-Canal is part of the Group Canal Plus operation, and claims to hold the world’s largest non-US film library. Sichler said to convert all of its content to HD would cost around •150m. Worse, he said, the cost of an HD master was some 7 times that of a DigiBeta version, and overall would add 1.7% to Studio Canal’s acquisition budget. He called for financial support from Europe to soften this burden.

Of course, the Holy Grail for 2006 that all of the above-mentioned broadcasters are seeking, is the soccer World Cup to be held next year in Germany. Indeed, there are some strong hints from industry insiders that the event might make it to British TV screens. The BBC (and ITV) jointly hold the transmission rights, unlike in Germany (where Premiere is the only broadcaster able to show every match). Some voices suggest the BBC (and perhaps other public broadcasters) might be delivering a showcase HDTV service during next summer with items like Wimbledon tennis, World Cup soccer, and other key sporting events forming a “summer extravaganza” in HD. SM

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

MARKET INTELLIGENCE

AFRICA'S TELECOMS EMPOWERMENT:
Changing the Understanding of a Continent

by Martin Jarrold, Chief, International Program Development, Global VSAT Forum

A common image of Africa, a mis conception for so long concen trated and too frequently re-affirmed in the collective mind of the developed world, was further reinforced on Saturday 2nd July 2005. This erroneous image is one of a continent, of a population approaching one billion people, which is as ravaged by a *total inability* to meet the challenge of its many socio-economic development and public health problems as it is by the very existence of those problems in and of themselves. For Africa has begun the process of empowering itself. It has started this process through a mass realization of the power of telecommunications: to channel knowledge and challenge ignorance; to facilitate commerce and engender growth. And it is a process in which satellite communications is playing out a key role.

In recognition of this process, to help provide further momentum for it – and, indeed, to provide some additional fertile soil by which to further encourage it – GVF has organized for later this year the **NewCom WAFSAT (West African Satellite) Conference & Exhibition** in Abuja, Nigeria. This major regional event recognizes and welcomes Nigeria's plans to launch a communications satellite to serve western Africa, and beyond from 2007; the continuing efforts of RascomStar-QAF to bring a satellite and ground segment infrastructure to the service of the entire African continent; and, the continuing deployment over Africa of increased satellite transponder capacity by the world's major satellite operators. The agenda for this important conference event promises to cover and analyze key questions relating to: broadband over satellite in the West African market context; the regulatory environment appropriate for the IP satellite generation; VoIP over satellite; the emergence and growth of public and private sector applications over satellite, and the perspectives of the satellite-based application end-user community. More information about NewCom WAFSAT will be delivered through this column in due course, but can in the interim be found at www.gvf.org, or by contacting me at martin.jarrold@gvf.org.

As a broad generalization, it is indeed beyond question that the nations and peoples of sub-Saharan Africa are seriously threatened by the interrelated problems of widespread poverty; economic underdevelopment; lack of access to education; the public health crises of the continued spread of HIV-AIDS and of other preventable diseases such as malaria; as well as the consequences of disaster – both natural and man-made. But, what is wrong with the usual picture of Africa, and what Africa actually needs, is a major shift in the developed world's perceptions of its internal resourcefulness. Africa's future is not only dependent on what great strategies the developed world introduces to affect the Continent; but, is also dependent on initiatives that Africa can adopt for itself.

On 2nd July satellite technology enabled billions across the world to see the performance of various musicians, and others, in various cities around the world – their collective attempt to influence the global conscience about Africa's challenges. From 6th July the satellite industry will be making a major contribution to the dissemination of news from the meeting of leaders of the G8 countries – the world's richest – as they tackle that part of their agenda that addresses the question of further debt relief for the world's poorest nations – many of them in Africa – together with policies for expanded aid programs and more balanced trade conditions for Africa's exporters.

This is all good. But, in a similar vein (and as has been indicated above) the satellite industry is also actually contributing in a major way to the advance of the very connectivity solutions, to the deployment of the very applications, that Africa is increasingly using to help itself. And, in a related development, on 16th June – as the global communications and information technology community looks forward to the next stage of the World Summit on the Information Society (WSIS) process – the International Telecommunication Union announced its latest ICT development initiative. Called *Connect the World*, this ITU plan aims by 2015 to facilitate at least basic voice service connectivity for the 30% of the world's village-sized communities currently still without even this most basic of telecommunications provision.

An increasing number of Africans around the Continent are today achieving their access to voice – and, importantly, to SMS – provision via mobile networks, networks whose deployment is in some measure, in some part, dependent on satellite. In fact, over Africa now, some 20 satellite transponders are in use for a combination of trunking mobile telephone traffic and for backhauling mobile voice traffic to the Public Switched Telephone

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Network (PSTN). Growth of the mobile telephony subscriber base is one example of how many ordinary Africans are driving the Continent's vital technological 'leapfrogging' (i.e., not trying to emulate the developed world's extensive wireline infrastructure), as numbers of subscribers accelerate way ahead of the very limited numbers of fixed phone lines, a limit which is more often than not a reflection of the absence of competition arising out of the monopoly incumbency of a legacy telecoms operator. ***Figure 1*** – below – illustrates this acceleration.

Beyond such satellite-terrestrial wireless hybrid scenarios, recent developments in Internet-based VSAT systems have now rendered the technology able to service Africa's need for low-cost terminals using small diameter antennas and

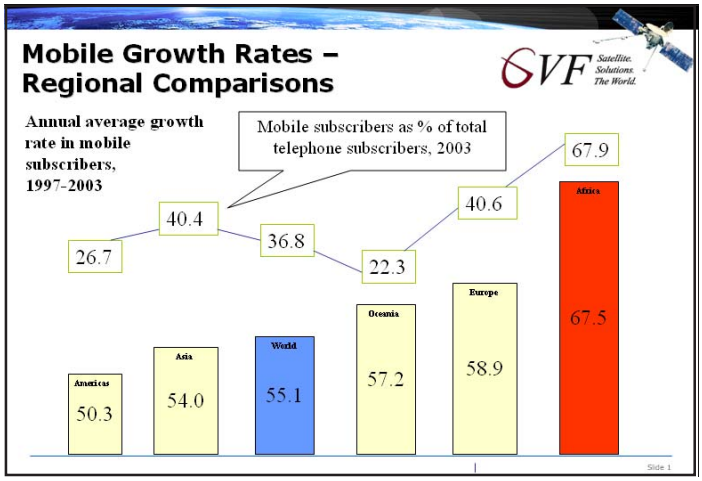

Figure 1 ***– Africa 1997-2003: Average annual growth rate in mobile subscribers & Mobile subscribers as percentage of total telephone subscribers (2003). This pan-Continental averaging disguises somewhat the situation in many African countries where, particularly now in 2005, the number of mobile subscribers greatly exceeds the number of fixed lines.***

associated customer-premises equipment, so that enterprise- and consumer-class systems can cost less than US$2,000 and US$1,000, respectively. But, markups on equipment and installation after cost increases imposed by shipping, duties and clearance payments means that by the time the equipment is installed, up to US$3,000 can be added to the overall total. Africa's governments can, but not yet enough do,

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streamline equipment importation clearance procedures, and eliminate excessive duties for ICT equipment, moves which are important in maintaining the advantages of cost-effectiveness for satellite-based services and which are wholly within the decision-making realm of the Continent's administrations.

Similarly, it is within the power of Africa's political administrations to effect an improved competitive environment via greater liberalization of domestic telecoms markets, as well as introducing the kind of reformed regulatory practices that make access to licensing procedures more straightforward and the actual cost of licenses within practical and proportionate reach of end users.

There are already many thousands of public and private African organizations – from banks, stock exchanges and Internet Service Providers (ISPs), to schools, hospitals and rural/semi-urban telecentres – that use VSAT satellite systems to deliver business, educational and health information. These entities have managed to overcome these unnecessary obstacles. But, this figure may easily and quickly grow to the many tens-of-thousands, even hundreds-of-thousands, provided there is the necessary – African – political will, to accelerate the creation and development of the necessary – African – knowledge and skills base, to build for an even more resourceful Africa.

Africa should not be viewed as just a passive player. It can and will dynamically participate in forging its own development destiny… with a little help (and encouragement) from its friends. The development potential that is offered by the global satellite industry makes it one such friend.

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ANDREW CORP	ANDW	**12.52**	9.30 - 20.16
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NEWS CORP	NWS	**16.85**	15.305 - 19.41
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