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July 2004 Worldwide Satellite Magazine Vol. 2 No. 4

SATELLITE SPORTS COVERAGE

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July-August 2004

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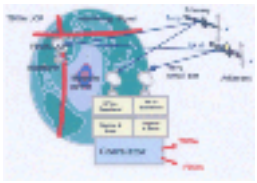

REGIONAL UPDATE

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NOTES FROM THE EDITOR

That's One Small Step for Mankind...

When test pilot Michael Melville landed his privately-funded rocket ship in the Mojave desert after completing the first non-government sponsored manned flight into outer space, he climb out of the cockpit and triumphantly simulated a rodeo cowboy riding his wild bronco. The display of bravado was characteristic of the gung-ho, can-do entrepreneurial spirit that made possible this historic feat. Funded by Billionaire Paul Allen, co-founder of Microsoft, the rocket-powered spaceship, aptly named "*SpaceShipOne*" was designed by the legendary Burt Rutan.

Costing a mere $20 million, Space Ship One has emerged as the leading contender for the Ansari X Prize, a $10 million award to the first privately financed three-seat spacecraft to reach 62 miles and repeat the feat within two weeks. To win the X-Prize, private teams must finance, build and then fly a three-person spacecraft 100 km (62 miles) to space, return safely, and then demonstrate the reusability of their vehicle by flying it again within two weeks. By successfully reaching 62 miles to space and landing back safely, it has made the proverbial first step to winning the prize.

The Ansari Prize is envisioned to achieve what previous prizes such as the one for the first non-stop trans-Atlantic flight won by Charles Lindberg in 1927 achieved in developing the $ 300 Billion a year commercial aviation industry.

A lot of the technology developed by the satellite communication industry will be very useful in the development of a commercial space transportation industry. So this important milestone, will have a long-term impact on the satellite industry--opening up yet another vital market.

More importantly, Melville's flight rekindled the spirit of individual enterprise and innovation that will serve the space industry well as it meets the challenges of this new millennium.

As Peter Garrison of *Flying* magazine aptly put it, playing on Neil Armstrong famous phrase upon landing in the moon: "*It may have been one small step for mankind, but it was one giant leap for a man.*"

Virgil Labrador

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Satnews Publishers
800 Siesta Way,
Sonoma, CA 95476 USA
Phone (707) 939-9306
Fax (707) 939-9235
E-mail: design@satnews.com
Website: www.satmagazine.com

EDITORIAL
Silvano Payne
Publisher

Virgil Labrador
Managing Editor and Editor, North America

Chris Forrester
Editor, Europe, Middle East and Africa

Bernardo Schneiderman
Editor, Latin America

Peter Galace
Editor, Asia-Pacific

John Puetz, Bruce Elbert
Dan Freyer, Howard Greenfield
Contributing Writers, The Americas

David Hartshorn, Martin Jarrold
Contributing Writers, Europe

Baden Woodford
Contributing Writer, Africa

Jill Durfee
(jill@satmagazine.com)
Advertising Sales

Joyce Schneider
(joyce@satnews.com)
Advertising Sales

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CALENDAR OF EVENTS

August 2004

August 29-September 2 Dubai, UAE **SatCom Middle East 2004**
Lynn Nasser, Conference Manager
Tel: +27 (0)11 463 2802 Fax: +27 (0)11 463 2802
e-mail: lynn.nasser@terrapinn.co.za
www.terrapinn.com/2004/sat_AE/index.asp?&

September 2004

September 3-4 Seoul, Korea, **APSCC 2004**
Inho Seo, Conference Director
Tel: +82 2 508 4883, Fax: +82 2 568 8593 Email: info@apscc.or.kr
http://www.apscc.or.kr

September 7-11 Busan, Korea, **ITU Telecom Asia 2004**
www.itu.int/asia2004

September 9-14 Amsterdam, The Netherlands **IBC 2004**
Tel. +44 (0)20 7611 7500 Fax: +44 (0)20 7611 7530
e-mail: registration@ibc.org
http://www.ibc.org

September 13- 16 London, UK **COMSAT VSAT Confrence 2004**
Tel. +44 (0)1727-832288
e-mail: maria@comsys.co.uk
http://www.comsys.co.uk/vc04_mn.htm

September 13-16 Houston, Texas, USA **Offshore Communications 2004**
Inger Peterson
Tel. +1-877-270-7102
e-mail: ipeterson@offshoresource.com
http://www.offshorecoms.com

September 14-17 Tianjin, People's Republic of China **PTC Mid-Year Seminar and Exhibition 2004**
Contact: Dolores Fung
Tel.: +1.808.941.3789, ext.120
e-mail: dolores@ptc.org
www.my2004.org

September 28-30 St. Pete Beach, Florida, USA **SUIRG CONFERENCE 2004**
Tel. and fax: +1-941-575-1277
E-mail: bobames@suirg.org
www.suirg.org

September 30-October 2 Vicenza Fair, Italy **SAT EXPO 2004**
Tel. +39-0444-543-133 Fax: +39-0444-543-466
E-mail: promospace@satexpo.it
http://www.satexpo.it/en/index.php

INDUSTRY NEWS

The Blackstone Group Acquires New Skies Satellites for $956 million

New Skies Satellites N.V. signed a definitive agreement for the sale of the company to affiliates of The Blackstone Group, a private investment firm, for $956 million in cash, equivalent to approximately $7.96 per fully diluted share.

The Blackstone transaction has received unanimous approval from the Supervisory and Management Boards of New Skies, who intend to recommend it to the company's shareholders.

The sale will involve the transfer of New Skies' business and operations to Blackstone and the distribution of the cash proceeds to New Skies shareholders. The sale will be structured as a sale of New Skies' assets and liabilities. New Skies' business activities will be continued under ownership by Blackstone and all employment obligations will be honored. The sale is subject to regulatory approvals.

Goldman Sachs & Co. and N M Rothschild & Sons Limited served as financial advisors to New Skies, and Cleary, Gottlieb, Steen & Hamilton and De Brauw Blackstone Westbroek N.V. served as its legal advisers. Morgan Stanley and Deutsche Bank Securities, Inc. served as financial advisors to Blackstone, while Simpson Thacher & Bartlett LLP and NautaDutilh N.V. served as its legal advisors. Deutsche Bank and ABN AMRO are providing acquisition financing for the transaction.

Alcatel and Finmeccanica to Merge their Space Operations

Alcatel and Finmeccanica announced the signature of a memorandum of understanding to merge their space activities and form alliances in the space sector through the creation of two sister companies, to which both partners will contribute their respective satellite industrial and service activities.

The first company, Alcatel Alenia Space, of which Alcatel will hold approximately 67% and Finmeccanica approximately 33%, will combine Alcatel Space and Alenia Spazio's industrial activities. It will concentrate on the design, development, and manufacturing of space systems, satellites, equipment, instruments, payloads and associated ground systems. The management team of Alcatel Alenia Space will be located in France.

The company will operate through five business divisions (Telecommunications, Optical Observation and Science, Observation Systems and Radar, Navigation, Infrastructure and

INDUSTRY NEWS

Transportation). With estimated 2004 sales of 1.8 billion euros and around 7,200 people, it will create one of the largest space companies in Europe.

The second company, of which Finmeccanica will hold approximately 67% and Alcatel approximately 33%, will combine Telespazio with Alcatel Space's operations and services activities. It will concentrate on operations and services for satellite solutions, which includes control and exploitation of space systems as well as value-added services for networking, multimedia and earth observation. Its management team will be located in Italy. With estimated 2004 sales of 350 millions euros and around 1,400 people, it will be a key player in the space services market.

The space alliance will be overseen and coordinated by a dedicated Steering Committee, co-chaired by the CEOs of Finmeccanica and Alcatel.

US, EU Reach Agreement on GPS

After years of negotiations, the US and the European Union (EU) have reached an agreement Monday, settling the technical dispute between the US' Global Positioning System with the planned EU Galileo System.The agreement will be formally signed June 26 at the U.S.-EU summit in Ireland.

The agreement follows an understanding reached earlier this year in Brussels to ensure non-interference and compatibility between the two systems. The deal will be signed by U.S. Secretary of State Colin Powell and Loyola de Palacio, the EU commissioner for transportation..

GPS, which currently uses 27 U.S. satellites is a satellite navigation system developed and maintained by the U.S. government. Initially designed for military applications, civilian users have found numerous applications using GPS. It enables users to accurately determine their position anywhere in the world.. The planned Galileo System will use 30 satellites and is scheduled to launch service in 2008.

INDUSTRY NEWS

General Dynamics to Acquire TriPoint Global Communications

General Dynamics has entered into a definitive agreement to acquire Newton, N.C.-based TriPoint Global Communications Inc., a privately held provider of ground-based satellite and wireless communication equipment and integration services for video, voice and data applications. Terms of the agreement were not disclosed.

The transaction has been approved by the boards of directors of both companies and is subject to regulatory approvals; it is expected to close in the third quarter of 2004.

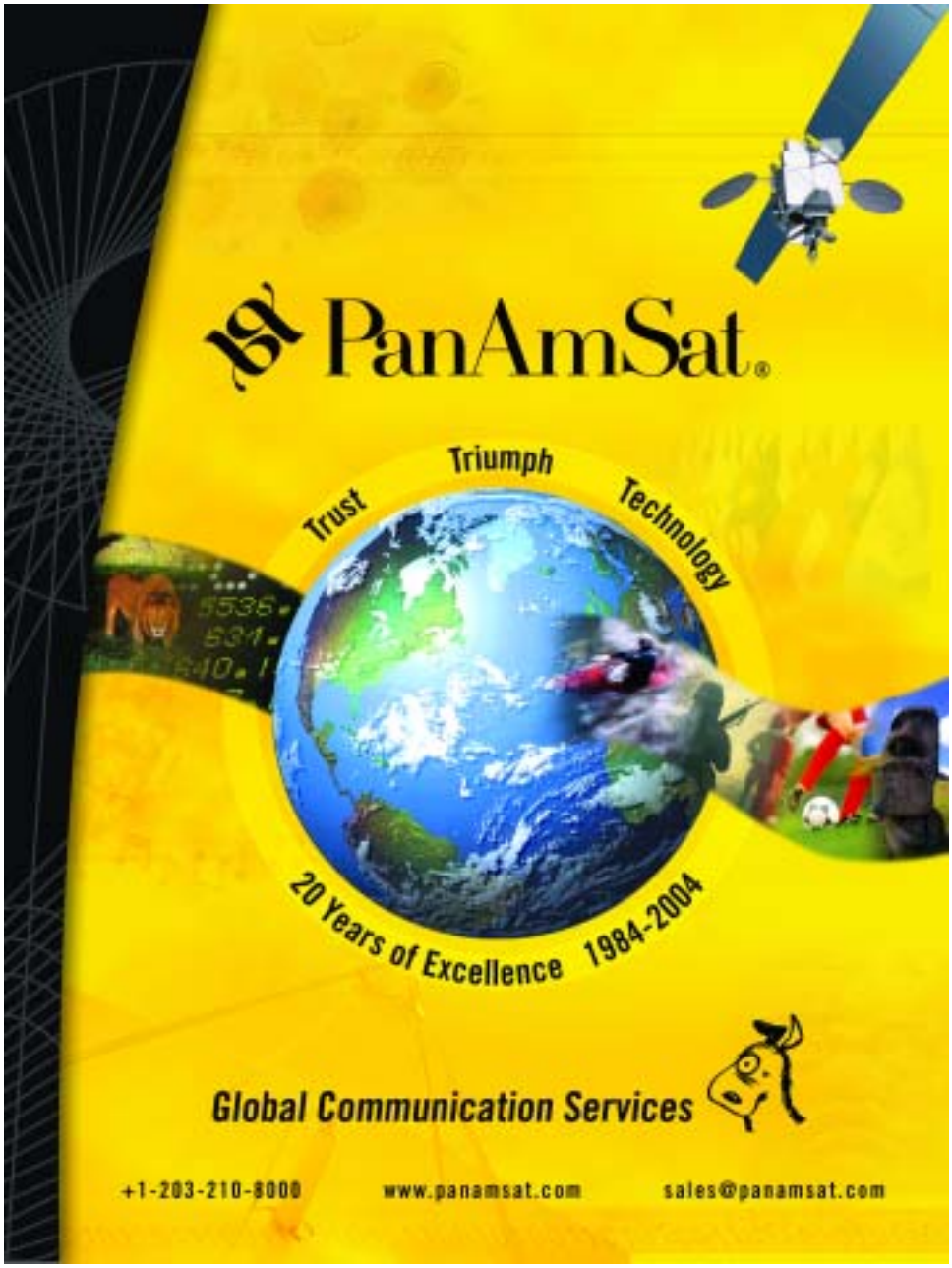
TriPoint Global Communications and its VertexRSI, Prodelin and Gabriel brands provide solutions for global satellite and wireless communications requirements. The company is a supplier of base station and earth station communications products and services, VSAT antennas and antenna systems and wireless backhaul products. The company has approximately 1,450 employees in 14 locations, including Newton, N.C.; Duluth, Ga.; San Jose and Torrance, Calif.; Rockaway, N.J.; State College, Penn.; Kilgore, Longview, Mexia and Richardson, Texas; and Estonia, Germany and India.

.TriPoint Global Communications will become part of the General Dynamics C4 Systems business unit, which is a leading integrator of secure communication and information systems and technology. With more than 7,000 employees worldwide, the company specializes in command and control, communications networking, computing and information assurance for defense, government and select commercial customers in the United States and abroad.

General Dynamics, headquartered in Falls Church, Va., employs approximately 68,400 people worldwide and anticipates 2004 revenues of $19 billion.

First Privately-Funded Manned Space Mission a Success

A privately-funded, rocket-powered spacecraft called SpaceShipOne successfully exited the earth's atmosphere today and safely landed back at 8:15 PDT at the Mojave desert airport in California. The spacecraft was piloted by Mike Melvill and funded by Billionaire Paul Allen, co-founder of Microsoft.The spacecraft was designed by innovative aircraft designer Burt Rutan and was reported to have cost $20 million.



There were actually two craft involved in the historic flight—a jet-powered aircraft called White Knight carried SpaceShipOne to 50,000 feet and released it using its own rocket power to the exit the earth's atmosphere. After reaching approximately 62 miles altitude, SpaceShipOne glided back safely into Mojave airport.

SpaceShipOne has emerged as the leading contender for the Ansari X Prize, a $10 million award to the first privately financed three-seat spacecraft to reach 62 miles and repeat the feat within two weeks. To win the X-Prize, private teams must finance, build and then fly a three-person spacecraft 100 km (62 miles) to space, return safely, and then demonstrate the reusability of their vehicle by flying it again within two weeks.

The Ansari Prize is envisioned to achieve what previous prizes such as the one for the first non-stop trans-Atlantic flight won by Charles Lindberg in 1927 achieved in developing the $ 300 Billion a year commercial aviation industry. The Ansari Prize hopes to spur the development of the commercial space industry.

ISCe 2004 Attendees Optimistic About the Satellite Industry

Delegates at the 3rd annual International Satellite and Communications Conference and Expo (ISCe), which closed last week in Long Beach, CA, expressed their optimism about the future growth of the satellite industry.

During ISCe, the premier annual West Coast conference and exposition for global leaders in the satellite industry, delegates provided their opinions in a trends survey conducted by Futron Corporation and ISCe organizer, Hannover Fairs USA, Inc.The survey, in which 63% of the over 700 ISCe delegates participated, focused on future business drivers, industry ownership trends and market trends in the satellite industry.

Respondents confirm that new business growth over the past 12 months has come from military/defense services, and that the greatest revenue growth over the next 3 years is expected from military/defense services.Sixty-nine percent (69%) of the respondents expect financial investments in the satellite industry increase over the next 3 years, while 23% expect investment levels to remain the same. Sixty-nine percent (69%) see this as a positive development for the satellite industry.Views on the strength of revenue growth within various satellite industry segments are generally unanimously positive.

Sixty-nine percent (69%) of respondents anticipate the strongest revenue growth in satellite services, followed by ground equipment manufacturing (17%) and satellite manufacturing (10% of respondents). 3% of survey respondents believe that launch vehicle manufacturing would experience the largest revenue growth.Respondent views vary on the sources of revenue growth in specific satellite service categories.The greatest revenue growth in satellite services is expected from broadband (39% of respondents), followed by direct-to-home television (22%), satellite radio (20%) and mobile (15%). Growth in VSAT networks and applications is seen as a primary growth area by 5% of survey respondents. Fifty-three percent (53%) of respondents anticipate a return to sustained growth from commercial customers in a 3-4 year timeframe, while 25% of respondents project this into the 1-2 year timeframe.

David Cavossa, Acting Executive Director of the Satellite Industry Association and co-host of ISCe, states, "While this survey reflects the economic outlook from the standpoint of the satellite industry insiders who responded at ISCe 2004, the critical importance of technical advancement and a sustainable economic health of the satellite industry as it supports security, commerce and quality of life must be remembered."

Joachim Schafer, President of Hannover Fairs USA, Inc., the official organizer of ISCe comments, "This survey reflects the current up-beat mood in the satellite industry and the healthy prospects industry leaders see in the military, civilian and commercial segments of their market. It matches the palpable optimism during this year's ISCe conference." He adds, "Hannover Fairs USA will continue in its efforts to support the success of the satellite industry through events such as ISCe, which offers a unique forum for a productive information exchange among key industry stakeholders, vendors and users alike." SM

NEW PRODUCTS

IP ACCESS Introduces New Mobile IP Satellite Solution

IP Access International launched a new IP Satellite mobile solution during the recently-held ISCe show in Long Beach, CA . The mobile solution is housed in a ruggedly-fitter Hummer H2 and is targeted for Enterprise, Homeland Security, Defense Organizations and temporary back up applications.

The solution is easy to operate and does not require a technician. With a push of a button, the antenna automatically acquires, peaks, and cross-polls the satellite allowing for instant connectivity. The portable VSAT solution is ideal for companies needing quick-deploy communications needs for disaster recovery, Emergency first responder situations, Enterprise Mobile Applications, Remote file transfer, Voice Over IP (VOIP), Terrestrial network restoration, Satellite News Gathering and other applications. For additional information email sales@ipinternational.net or

go to: www.ipinternational.net

NEW PRODUCTS

Force Inc. Introduces its SPECTRA*Linx* 3000 Series

Force, Incorporated introduced the **SPECTRA*Linx* 3000 Series L-Band and IF Satellite Transport System.** Designed for Teleport operators, the 3000 Series provides a state-of-the-art approach to this demanding environment and meets or exceeds the most stringent performance parameters required by the industry.

The Model 3000 optically transports the entire L-Band frequency range (950 – 2250 MHz) while the Model 3070 transports the entire IF frequency range (10 – 200 MHz) with extended frequency ranges available upon request. Companion modules allow the system to incorporate RS-32/422/485/Ethernet data transport, Ethernet data only, RF switching for signal redundancy, and SNMP command and control of the system.

Stand-alone 3000, 3010, and 3070 modules are available in 1310 nm, 1550 nm, CWDM, and DWDM configurations. Models 3000

and 3070 offer three user-selectable modes of gain control and provide a number of system test points and indicator LEDs, further ensuring proper Teleport system operations. Advanced DSP controls continuously monitor all critical parameters, ensuring optimum performance over the entire operating temperature range, extending the life of the product. The rugged stand-alone enclosures can withstand the extreme environments experienced by satellite installations. The 3RU modules use the Model 3000 chassis and power supplies. The chassis will hold two power supplies for fail-safe operation and may be ordered with SNMP command and control capabilities. Designed to provide unsurpassed performance to professional operators, the 3000 Series is attractively priced against comparable competitive systems, and offers complete system flexibility. For more information **call +1-800-732-5252** or go to: **www.forceinc.com**

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EXECUTIVE MOVES

David Cavossa Named New SIA Executive Director

The board of directors of the Satellite Industry Association (SIA) has named David Cavossa as the new executive director effective June 14, 2004.

David Cavossa

Cavossa has served as SIA's director of external relations the last three years and as the acting executive director during the last two months. As executive director, Mr. Cavossa will act as a chief advocate for satellite operators, manufacturers, value–added resellers, launch service providers, and ground equipment suppliers on a broad range of trade, regulatory, and legislative issues of common concern to the commercial satellite industry.

Before joining the SIA, Cavossa worked at NASA Headquarters, in Washington, D.C., in the Office of External Relations and in the Office of Legislative Affairs where he participated in NASA's education and outreach campaign for Congressional staff.

Cavossa obtained a Master of Science, Technology and Public Policy from the George Washington University (GWU), Space Policy Institute as a *Space Policy Fellow*. He also holds a Bachelor of Physics/Astronomy and Political Science from Wheaton College, in Norton, Mass.

iDirect Technologies Appoints of KW Chan as VP of Sales and Managing Director, Asia - Pacific Rim

iDirect appointed KW Chan as Vice President of sales for the Asia - Pacific Rim region. Chan will be based at iDirect's new Hong Kong office.

KW Chan

Chan, a 23-year telecommunications veteran, was most recently with SES Americom as the Director of North East Asia. Prior to SES, . Chan was General Manager, Broadcast & Fixed Satellite Systems at Cable & Wireless (Hong Kong Telecom) while gaining his initial experience at British Telecom's Wireless Division.

Chan is the co-author of a handbook outlining the strategies of introducing non-voice services such as packet switching, videotex, or electronic fund transfer into developing countries.

Educated in the UK, Chan received his MBA from the University of Stirling. He also holds a Technical Education Diploma and a Certificate of Management from the British Institute of Management. Chan is also a member of the International Telecommunication Union's (ITU) International and Telegraph and Telephone Consultative Committee (CCITT) joint proposal development team.

CASBAA Appoints Middleton To New Post as General Manager, SouthEast Asia

The Hong Kong-based Cable & Satellite Broadcasting Association of Asia (CASBAA) announced last week during CommunicAsia the appointment of Henry K. Middleton as CASBAA General Manager, Singapore & Southeast Asia.

Middleton will be responsible for CASBAA's relationships with government, member organizations and the multi-channel television and broadband industries as a whole, as well as implement a CASBAA decision in 2003 to formally open an office in Singapore.

Henry Middleton

Tom Goebelbecker Named Vice President, Sales for VertexRSI Programs Division

Tom Goebelbecker has been appointed Vice President, Sales of TriPoint Global's VertexRSI Programs Division in Duluth, Ga. Goebelbecker joined TriPoint Global Communications last year as Vice President, Sales for the company's Gabriel business unit. He will report to Brad Majeres, Vice President and General Manager of Duluth's Programs Division.

Goebelbecker holds a Bachelor of Science Degree in Manufacturing Engineering from Miami University, Oxford, OH.

EXECUTIVE MOVES

Tim Richard Joins Globecast North America as General Manager, Governments Services Group

GlobeCast has appointed Tim Richard as General Manager, Government Services Group based at the company's office in Washington, D.C. Richard will be responsible for developing new business with the U.S. federal government, U.S. Department of Defense agencies, as well as state, local, and international governmental organizations.

Richard brings over 21 years of experience in the military and defense-related industries, primarily in the command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) arena. Richard formerly held positions in government services for PanAmSat, Q.E.D. Systems Inc, and SEMCOR, as well as served 10 years in the U.S. Navy.

Clark Pettit Appointed Senior Vice President of Ascent Media Group's Global Digital Media Center

Clark Pettit has been named Senior Vice President of Ascent Media Group's (AMG) Global Digital Media Center (DMC) based in Burbank, Calif.
With nearly two decades of experience in strategy, operations management, digital asset management solutions and B2B integration, Pettit joins Ascent Media Group from EMI Music Group, where he served ten years, most recently as Vice President, Global Digital Operations and Asset Management. In that role, Pettit oversaw the strategic planning and operations that established the global digital supply chain and the migration of music to digital products. Previously, he was with DOW Chemical where he managed a variety of information technology projects.

Clark Petit

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COVER STORY

Satellite Players Gear Up for Athens 2004

By Dan Freyer

The Olympic stadium is still not complete as of press time (photo taken June 16 from stadium shot position through GlobeCast), but the satellite service providers are all raring to go.

It wouldn't happen without the wide reach of satellite technology. With its expected cumulative worldwide audience of over 25 billion people, $1.498 billion in TV rights costs, and its universal appeal, the Athens 2004 Summer Olympics is sure to be the biggest ever.

The existence of more channels in TV markets everywhere–due in large part to the power of satellite television's global growth – is upping the competitive stakes for programmers. To stay ahead, more programmers need to air more hours of the joy of victory and agony of defeat. Dick Ebersol, chairman of NBC Universal Sports and Olympics says NBC will "showcase the Summer Olympics in unprecedented fashion and to take on the daunting challenge of producing as much total programming from Athens as the last five Summer Olympics combined". The resources needed to complete the Olympian job of producing and delivering 3,800 hours of live game signals for airing in nearly 200 countries is growing by leaps and bounds.

Thanks to the satellite industry's commitment of infrastructure and talent — behind the scenes and on the scene — it will be

easier than ever for international broadcasters to get the job done in Athens 2004.

A Signal Feat

To help Olympics broadcast rights holders, the Host broadcaster, Athens Olympics Broadcast (AOB) has been set up to produce the official "International Signal "(IS) with cameras and graphics at each live venue. AOB is massive. Its crew and staff of nearly 3800 will use over 1000 cameras, 450 videotape machines, 350 broadcast trailers and 55 outside broadcast vans. During the 3800 hours of broadcasting, AOB is set up to operate 1795 commentator positions to support 12,000 accredited journalists.

Clean signals from the venues are delivered to the International Broadcast Center (IBC), the official origination point of broadcast signals for rights holders.

From mid July until October 2004, the IBC will be the world's largest Broadcaster facility, with a population of 10,000 staff running 24/7, and broadcasting nearly fifty event channel feeds for onward worldwide distribution.

Despite their incredible scale, the government-approved official IBC and Host Broadcaster don't provide nearly enough facilities to meet all the needs of the global broadcaster community. Rights holders want additional customized services and have their own production needs. Non-rights holders have still more production, post production, tape and live transmission needs, and are not permitted in the AOB or IBC.

Go Team

To meet these needs, The Athens Broadcast Base was set up through an alliance between GlobeCast, Gearhouse Broadcast, and Stefi Productions.

GlobeCast is a leading satellite services company, operating a global network of distribution platforms for broadcast and advanced content delivery with presences on six continents with 15 teleports and technical operation centers in leading media cities. Stefi Productions is one of the largest production companies in Greece. Gearhouse Broadcast is a global broadcast solutions company providing equipment rental and sales, project and production solutions based in London, Los Angeles and

GlobeCast Athens 2004 Broadcast Base

Sydney with a centralized infrastructure including 24/7 technical support.

The Broadcast Base offers non-rights holders a one-stop-shop for all of their production and broadcast requirements, including studios, work space, broadcast equipment, worldwide satellite transmissions, uplinking facilities, playout, conversion, encoding and mobile SNG facilities. The Broadcast Base has attempted to anticipate and provide for broadcasters every possible need--from linear and non-linear edit suites, multi-camera studios and control rooms in the facility to flyaway units, HD gear, ENG cameras and lenses, and crews, engineering services.

Familiar with GlobeCast from its decades of experience providing major broadcast facilities for summer and winter Olympics, the Global who's who of broadcasters have signed up for GlobeCast's Broadcast Base services, including: Sky Sports, Sky News, ITN, and Reuters in the UK and Mediaset, Italy; CNN and CBS from North America, TV Azteca and TV Globo from Latin America, 9 Network Australia; ATV and TVB in Hong Kong and TV Asahi and Fuji TV, Japan, and the Taiwan Pool in Asia.

Olympic Satellites: Love 'em and Leave 'em

Thanks to successful satellite launches recently, and the deployment of new capacity onto orbit over Asia and Europe, satellite providers are poised to meet the huge, but short-lived,

surge in demand that the Olympics create from July to October 2004.

The European Broadcasting Union (EBU) – an association of 71 public and national broadcasters in 52 countries in Europe, North Africa and the Middle East — will double its full-time capacity on Eutelsat during the Olympics. The EBU has booked the equivalent of 306 MHz of Ku-band capacity on Eutelsat's ATLANTIC BIRD™ 3 and e-BIRD™ and pre-launch capacity on the just-commissioned W3A spacecraft, at 7°East.

Globecast SNG Vans will be positioned throughout Athens.
(photo: Globecast)

In addition to contribution circuits to affiliates, the EBU will deliver 800 hours of live event coverage. The EBU is setting up an infrastructure dedicated to the event, deploying a new uplink site to deliver a total of 36 nonstop program feeds, 32 of which will be carried by Eutelsat. Says Stefan Kürten, Director of the Eurovision Operations "For Athens 2004 the EBU will go beyond the threshold of 1 Gbit/s of bandwidth". "This is a new historical record." he adds.

Hellas Sat Makes The Gods Proud

Greek and Cypriot-owned bird, Hellas-Sat which started service last year will perform its Olympic debut as GlobeCast and others plan use its capacity. The Astrium-built satellite's Ku-Band footprint is designed for optimal performance over Greece and neighboring areas.

The Asia-Pacific Broadcast Union (ABU), an association of broadcasters with over 100 members from 52 countries in the region, plans to use two transponders on Intelsat's IS-709 bird at 85ºE for delivery of the Olympic service primarily because the single "global beam" footprint reach from the Asia and Pacific to Africa. ABU will provide coverage for its members, creating eight channels of events for distribution. Intelsat will offer AOR, POR and IOR capacity for its clients. The Bermuda-based company received US FCC authority last summer to use the IS-709 satellite at the new 85.1°E orbital location, and although few if any C-band antennas point to the bird today, a successful Olympic transmission could help popularize the orbital position to Asian satellite users.

Meanwhile, PanAmSat will be offering approximately 17 satellite paths for the Olympics and over 6,000 hours using its PAS-1, PAS-3, PAS-4 and PAS-9 satellites.

Bring Your Own Teleport in Case of Fire

Getting enough uplink antennas and gear approved by the Greek government, frequency cleared, coordinated, tested and deployed is a huge challenge because many of the satellites have never been used before, or dedicated uplinks and fiber tail circuits to them just aren't available. The fact that a fire broke out in a room used by the Greek telecommunications company OTE, which when some cables apparently overheated near the Olympic press building has not exactly calmed nerves.

Thankfully other uplink options are available in case OTE capacity is stretched too thin, and flyways are allowed and will abound around Athens. The EBU has imported its own uplink complex. NBC has flyaways. CBS found a home away from home for its two dedicated live positions with views of the Olympic Stadium, dedicated flyaway uplink facilities, and office modules at the Broadcast Base. CNN has separate live positions, a dedicated flyaway uplink and workspace from the Broadcast Base as well.

Partnering for Success

Given the sheer size of the Olympic production and disparate needs of broadcasters, no single company can handle the needs of all broadcast clients. Satellite services are no exception to the approach of partnering for success.

For instance PanAmSat is packaging Broadcast Base services for its clients through GlobeCast, while GlobeCast will provide two Scientific Atlanta PowerVu-format MCPC uplink for the Americas via PanAmSat's PAS-1R bird, and one via its PAS-4 bird for Asia and Africa. On the Asia side, Hong Kong over-

the-air broadcasters TVB and ATV have signed up with GlobeCast for six digital satellite channels.

Satellite and Fiber: Contributing to Redundancy

While fiber is playing a key role in point-to-point contribution circuits, it's by no means eclipsed the role of satellite, and key broadcasters from North America to South America to Asia are tapping both technologies' strengths as complementary insurance against failure or degradation of one physical path during air time.

Observes broadcast consultant Lynne Rowe, President of One World Technologies:

"A number of players are using satellite for path redundancy although their main backhaul path may use fiber. The international fiber link from OTE, the monopoly Greek international telco's main European terminating point in London is fed off a spur between Italy and the UK which was still being constructed this year, and that made some folks nervous about it."

For the U.S. NBC, will run six feeds out of the IBC plus six SNG systems each with 4-channel digital transmit capabilities via AT&T fiber and satellite capacity. Brazil's TV Globo has ordered satellite circuits from Athens, but also required GlobeCast and Embratel – its network providers – to provide dedicated two-way fiber paths to connect Brazil with its signals coming from the IBC. The Taiwanese broadcast pool of rights holders tapped GlobeCast's ability to provide a multi-channel global satellite feed complemented by a fiber path in addition to coordinating all production, transmission facilities and fiber within Athens with an on-site technical team.

Setting New Records

While Olympic satellite transponder requirements may be short-lived, the huge TV production and promotion budgets for the event provide great opportunities to innovate and deploy the latest start-of-the art equipment that meets spec as vendors and TV exec try to leverage the publicity of the event to promote their organizations.

In a U.S.-broadcast-first, NBC will air 24-hour coverage, will for the first time cover every Olympic sport, with High Definition coverage alone nearly 800 hours, and NBC-owned Telemundo will provide the first exclusively non-English live Olympics broadcast in US history when it televises the games in Spanish. Another tech first, NBC will use Sony's new XDCAM professional disc system to create profiles of athletes and provide related news from in and around Athens.

As Athens races to finish construction, satellite industry observers and fans will be pleased to know satellite technology is alive and kicking at the forefront in bringing the Olympics to your local TV system, no matter where you are in the world — live!

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Dan Freyer is Director of Marketing, in America for GlobeCast, one of the world's leading satellite services company, operatng a global network of satellite distribution platforms for DTH and cable broadcast, enterprise media and advanced IP-based content delivery. He can be reached at daniel.freyer@globecastna.com

COVER STORY

Athens 2004 Coverage:

Getting the Images Home

By Chris Forrester
SatMagazine Editor for
Europe, Middle East and Africa

To say that broadcasting the Olympic Games is in the hands of one man would be something of an exaggeration. But Manolo Romero is arguably the most powerful man in the Olympic Games's television coverage, and has been for more than 30 years (since the Mexico City games in 1968). He is now chief executive of International Sports Broadcasting (ISB), the private company he established and which was Host Broadcaster for the Salt Lake City 2002 event, and the upcoming Athens and Turin games. ISB serves as television consultant to the International Olympic Committee, is a member of its Radio & Television Commission and its Executive Group, and is television advisor to the International Amateur Athletics Federation.

More importantly Romero is the man with the eye for the so-called "beauty shots", frequently the single image that ends up being the most remembered of a particular Games. Few will forget the high-diving images from Barcelona, when the divers were televised against a brilliant blue sky – and nothing else, or the thrilling moment when the jet-pack wearing specialists entered the arena during the Los Angeles games. During previous Olympics, he served as chief executive of Sydney's Broadcasting Organization, in the same capacity at the 1996 Atlanta event and head of International Operations for ABC for Los Angeles 1984. He has received several Emmys and awards including the IOC Golden Rings and Spanish "Ondas."

At Sydney there were constant 'beauty shots' set up for broadcasters, including the Olympic cauldron where the flame burned constantly, activity on the Olympic Boulevard as well as the iconic Opera House and Sydney Harbour bridge views, and that of Darling Harbour with the city skyline in the distance. Indeed, one radio-camera was set up on the busy Sydney Harbour to Manly ferry-boat just to show the crowds travelling between two of Sydney's key locations. Broadcasters could dip into these images as a backdrop to their own coverage. But it is Romero's guiding hand that's largely responsible for the images we see from the opening ceremony on Friday, August 13th, 2004, to the final moments.

ISB's Manolo Romero

As this is written the final touches are being made to the Athens International Broadcasting Center (IBC) which will end up housing more than 15,000 broadcasters (radio, television and Web/internet), and operate for 24 hours a day feeding signals to TV and radio stations around the world. It is probably the world's most complex and sophisticated broadcasting operation, and it's built for the two weeks or the games (and the immediately following Para-Olympics) and then discarded, only to recreated two years later (on a somewhat more modest scale for the Turin winter games), and then rebuilt for Beijing, China. Sydney's IBC covered 58,000 sq meters. Athens is bigger at 70,000 sq meters. Overlay work in Sydney began in November 1999, almost a year ahead of the event, and the IBC was partially

Greece's national broadcaster ERT is mounting is biggest-ever TV operation to help cover the games. They are working with the Athens Olympic Broadcasting unit to help put in place and produce:

- **Coverage of 301 sporting events**
- **More than 1000 cameras**
- **4450 VTRs**
- **3500 hours of live output**
- **350 Broadcast trailers**
- **12,000 accredited broadcast personnel**
- **52 TV remote production trucks (OBs)**
- **1795 commentary positions**

One of the "beauty shots" Romero is famous for.

operational on 15 August 2000. It was shut down as an operating facility on 3 October 2000. The Athens IBC complex comprises the fully revamped HELEXPO building (the National Exhibition Organizer), and two other new buildings.

The Olympics is larger and more complex than even the soccer (FIFA) World Cup, which although probably capturing more global eyeballs is a much more straightforward task than the Olympics. The soccer games are just 4 hours of intense activity, albeit with national opt-outs and unilaterals covering specific-interest matches.

Romero has his task made a little easier by the grouping of various regional broadcasting organisations, like the European Broadcasting Union, the Asia-Pacific Broadcasting Union (ABU), Arab States Broadcasting Union (ASBU), South America's Organizacion de la Television Iberoamericana (OTI) and then looser tie-ups like the TV image pools organized by Japan, China, Korea and others. However, most major national broadcasters also have their own dedicated feeds to take care of, and outfits like North America's giant NBC, the sports-mad Australian broadcasters, Japan and the UK's BBC, all have dedicated facilities at the International Broadcasting Center, taking unique coverage of some events as well as mopping up hundreds of hours of all-embracing television. Romero says that four years ago at Sydney some 90% of all Olympic action, whether heats or finals, was covered live somewhere on the planet.

During the actual games, Romero's Technical Operations and Engineering department is responsible for generating the video and audio signals from venues into the IBC and distributing those signals out to broadcasters. They use an extensive network of 'guest' broadcasting specialists drawn from well-known international names, like the BBC and RAI, and private OB companies like Europe's AlfaCam. Romero's department maintains commentary systems at the individual venues and the IBC, will look after all broadcast technical equipment at venues and the IBC, will implement all broadcast telecommunications ('talkback') needs at venues and the IBC as well as overseeing the construction integrity of the infrastructure at the IBC.

Having the circuits in place and the cameras ready is but one part of the mammoth logistical exercise. Technical operations works closely with the Bookings office, to help coordinate broadcaster's specific demands. For example, booking schedules availability of radio and television studios, edit suites, post-production and off-tube positions at the IBC and pre and post unilateral video and audio transmissions. In addition, Booking assigns electronic news gathering (ENG) camera platforms at the venues, collects and provides schedules for daily unilateral transmissions and commentator usage at the venues, and distributes all-important bibs and armbands for camera platforms, parking passes, observer seat allocations and special tickets for station VIPs. Booking is also judge and jury in arbitrating any conflicts in camera platforms, premium

ticket allocations and unilateral transmissions at daily briefings.

Already Romero has already held pre-event briefings, under the umbrella 'World Broadcaster Meeting'. Back at the Sydney games, more than 200 individual rights-holders sent (in some cases huge) broadcast teams to cover attended the Games in order to send unique footage, sometimes live, sometimes taped, back to base.

Multilateral signals are identified, level checked and equalised in the contribution area of the Transmission/Distribution Centre (TDC). The signals are then synchronised and the format converted to PAL or standard digital, depending upon the format in which they are originated. In Sydney the multilateral signal 'bundle' consisted of 40 active feeds and another two feeds for test and synchronization. Outbound national and international signals were monitored in the transmission area of the TDC. The TDC at Sydney claimed the world's largest video wall, comprising 400 individual monitors. Athens will provide even more.

Furthermore, Eutelsat and the European Broadcasting Union (EBU) have signed a contract for four wideband transponders that will be used by the EBU for television coverage of the Games. The additional satellite capacity will allow the EBU to provide private direct point-to-point circuits between Athens and the headquarters of television channels that have their own TV crews and content aggregation facilities in Athens. In addition to these private circuits, the EBU will simultaneously deliver 800 hours of live coverage with ambient sound to its 71 members.

The allocation and swapping of programs is a major part of the EBU's activities. The EBU is setting up an infrastructure completely dedicated to the Olympics, deploying a new teleport on-site which will deliver a total of 36 non-stop program feeds, 32 of which will be carried by Eutelsat. The 16 studios that will have a direct link to the Athens teleport are located in Moscow, Tehran, Belgrade, Budapest, Bratislava, Madrid, Zagreb, Ljubljana, Odense, Helsinki, London, Paris, Mainz, Oslo, Stockholm and Hilversum.

And this year's Olympics represents a major step-change in broadcasting demand, in both circuits and video complexity because almost every camera covering the games will be capturing its images in breathtaking High Definition. Some lucky American, Japanese, Korean and Australian viewers, who own HD equipment, will be able to enjoy Romero's images. The rest of the world will have to manage with Standard Definition quality. One can only wonder how that position might have changed by the time China opens its doors to Romero and his team in 2008. 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

FEATURES

The Scourge of Interference

By Robert Ames
President, SUIRG

It started out as just another Saturday. April 26, 1986 John R. MacDougall spent the day alone at his satellite TV dealership in Ocala, Florida, waiting for customers who never came. "It was," he says, "a normal day in the doldrums of the satellite TV industry." But that night, MacDougall, would set the world of satellite television spinning.

January 15, 1986 is when Home Box Office became the first pay TV service to scramble its signal full time. Other services were following HBO's lead. Dish owners were balking at the cost of descramblers and program fees.

On that fateful night, HBO was airing the Sean Penn and Timothy Hutton espionage movie, The Falcon and the Snowman. It was at 12:32 a.m. Sunday, April 27, that John R. MacDougall pushed the transmit button on his console and turned into Captain Midnight.

For 4 ½ minutes, HBO viewers in the eastern United States saw this message:

> **GOOD EVENING HBO**
>
> **FROM CAPTAIN MIDNIGHT**
> **$12.95/month**
> **NO WAY!**
> **(SHOWTIME/MOVIE CHANNEL BEWARE)**

It was at this moment that John MacDougall became infamous and satellite operators recognized the fragility of their service.

Flashing forward to the year 2003, almost all satellite operators have interference management programs/procedures in-place to mitigate the impact of unknown carriers uplinking into their satellites disrupting service.

What is Interference?

Within the telecommunications industry, in simple terms, interference is an unwanted signal mixing with an authorized signal, causing it to be degraded. Sometimes the level of interference can degrade the original signal to a point where it is corrupted for an extended period of time. A majority of the incidents are unintentional and should be manageable by satellite operators, who expend considerable resources to minimize the number of incidents and/or impact of interference on their operations.

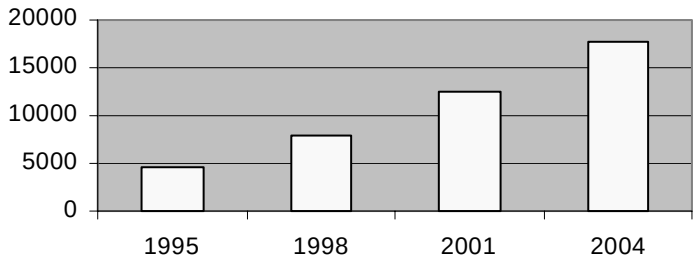
Interference Sources

Interference can have many sources. By way of example, interference may be caused by: system malfunctions, poor polarization control, improper antenna pointing, untrained operator mistakes, insufficient knowledge of new equipment, abandoned and uncontrolled satellite communications equipment, deliberate interference, and even intentional terrorism.

A typical satellite system might have as many as eight thousand transmitting antennas and twelve thousand individual communications carriers. A VSAT network can have many more transmitting antennas within a single network. Statistical probabilities ensure there will be occasions when an unintentional transmission disrupts an existing service. When this occurs, system quality is impacted and monitoring resources must be used to locate the offending source and restore normal operation.

As the number of satellites continues to increase, there is a corresponding increase in the number of uplinking satellite dishes, which are the terrestrial source points for interfering

Figure1: Transmit Antenna Growth



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signals. According to a report from Euroconsult, the Paris based consultancy, their "most probable" projection for new geo-synchronous satellites to be ordered by end-2007 is 177. The "possible" high-field estimate adds another 69 orders, for a possible 246 new satellites. An indication of the growth in transmitting antennas since 1995 is shown in figure 1. This does not address the obviously aggravating trend toward 2° satellite spacing.

Interference Management

The RFI problem requires a new approach to the problem combining improved management of operations, enhanced user training, and active techniques to quickly locate and remove the sources of interference. All satellite operators have at least a minimal interference management program in-place; the major operators have expended or are expending considerable resources in internal processes and interference geo-location identification systems.

Interference management procedures at most major satellite operations centers follow the following major actions in attempting to identify the source of an interfering signal:

•Customer contacts Operations Center (Ops Center), reporting complaint of interference to their services.

•Ops Center collects interference information from customer, e.g.: satellite ID, transponder, center frequency (CF), bandwidth (BW), and type of service affected to characterize the interference.

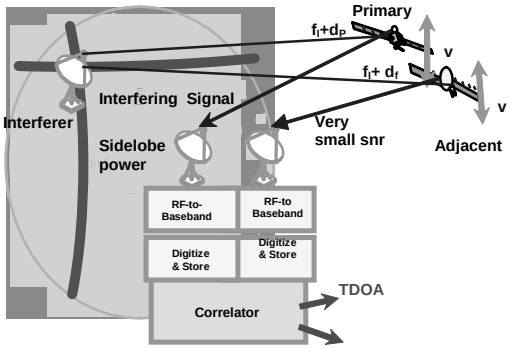

Figure 2: TLS Operational Configuration

•Ops Center controllers then utilize interference location procedures and tools such as spectrum analyzers to view the signal in an attempt to further characterize said interference.

•Cross check carrier databases, carrier frequencies and their transponders associated with each satellite check for CF, incorrect polarity, adjacent carrier interference or earth stations performing lineups.

•Review past interference signature plots for possible repeated interference.

•If all above the fail, the controller sends a telex message to all stations with the capability of transmitting to spot, hemispheric, zone or global beams.

•The message requests each uplink station to verify operation of their station equipment and plot their signals on their spectrum analyzer. Operator is requested to forward the plots to identify if a similar signal is being transmitted from their HPA.

•When all stations have responded to the message and have sent plots, and if the spurious emission has still not been removed, the Ops Center will resort to point-off procedures.

•Point-off requires each station within the beam to move their antenna off beam center until a receive level reduction of 50% has been observed on the spectrum analyzer. The procedure is repeated with each station until all addresses on the list have been contacted.

Advanced tools such as transmitter locator systems (TLS) are now available from multiple vendors to assist satellite operators in the geo-location of interference sources. The system is based on the fact that the offending antenna's main lobe is accessing the primary satellite, while its side lobe is radiating the same coherent information in a significantly reduced level to an adjacent spacecraft.

By simultaneously receiving the signals from both spacecraft, correlation techniques can be used to derive a Time Delay of Arrival (TDOA) and a Frequency Delay of Arrival (FDOA) or differential Doppler shift. Given the geometry of the transmitting antenna and two spacecraft, the TDOA data provides a longitudinal Line Of Position (LOP) whereas the FDOA data provides a latitudinal LOP.

The intersection of these two lines provides the geographical location of the offending station. The concept is illustrated in Figure 2, below. In practice, because of very low signal levels and low signal-to-noise ratios, the position is indicated by an error probability ellipse.

FEATURES

Summary

Interference is a long-term global problem that affects all users. It is exacerbated by the trend of satellite transmitting companies of minimizing costs by reducing operations staff and equipment costs and increasing automation.

Through SUIRG, satellite operators are increasingly united in their efforts to incorporate and advocate transmission practices that assist the user community to be more responsible and to understand the consequences of radio interference.

Robert Ames is President of SUIRG Inc. He can be reached at bobames@suirg.org

About Satellite Users Interference Reduction Group (SUIRG)

Because satellite interference is globally indiscriminate, eleven years ago domestic and international satellite operators formed an informal group to focus on sharing interference incidents, mitigation approaches and identification of faulty equipment. The group is called the Satellite Users Interference Reduction Group (SUIRG). It meets at least annually to share interference incidents, identify causes and successful approaches to quickly identifying and mitigating the geo-location of interference.

SUIRG was incorporated in September 2003. The purposes of the SUIRG are:

1. To develop means to reduce RFI on communication satellites.
2. To promote and further equipment design with the view to minimize interference.
3. To share for the mutual benefit all information related to specific troublesome interference situations.

The Organization and its Members, in pursuit of the stated Purposes, agree to act in accordance with the following Principles:

1. To promote an open forum in which all segments of the international satellite community can cooperate in the advance and exchange of ideas on Interference Reduction.

2. To maintain and extend cooperation among all Members of the Group for the improvement and exchange of Interference Reduction issues and techniques.

3. To promote and to offer technical assistance to all Members in the resolution of Radio Frequency Interference.

SUIRG, Inc.
P.O. Box 512548
Punta Gorda, FL 33951-2548
PH/FX: 1-941-575-1277
suirg@earthlink.net
www.suirg.org

REGIONAL UPDATE

Regulatory Status in Latin America

(Third in a series on the Latin American market)

By Bernardo Schneiderman
SatMagazine Editor for Latin America

Latin America is one of the key regions for satellite communication applications becauseof its geographically diverse environment. The region includes the Amazon Forest that covers major parts of Brazil, Peru, Colombia and Venezuela. The Southern Cone where the Patagonia region include major parts of Argentina and Chile with low density population but has become during the last few years one of the major centers of the fishing industry with the proliferation of salmon farms. Additionally the Caribbean region because of their unique geographic location in the region becomes one of the hot spot for Satellite Applications.

With all this environmental factors plus the economic potential of the region, regulatory bodies has been slowly open the market for more offerings of satellite capacity and facilitate penetration of satellite services in the region.

The Regulatory Bodies in each country have been working with the ITU (International Telecommunication Union www.itu.int,) CITEL (Inter-American Telecommunication Commission www.citel.oas.org) and with GVF (Global VSAT Forum www.gvf.org). All these organizations have been supporting the opening of the market in the region to facilitate the penetration of the broadband services via satellite in the rural and remote areas of the region and to democratize the use of the technology and bridge the digital divide.

Among the countries that have the best open environment in Latin America is Chile. Chile adopted the Open Skies Policy (Subtel www.subtel.cl) - that was implemented in late 2000 and give the freedom for satellite operators to provide services without a need to replicate license in the country for the satellite that has already been licensed in countries. Additionally satellite is not considered a major service but as part of the infrastructure to provide phone, Internet and data services. Currently Chile is expecting to implement two major projects that will jump start satellite services in the market. One project is to provide to more than 1,600 hospital and health care clinics Internet and data services with the same level in big cities or isolated communities. Another project is to provide Internet access for schools and libraries. These projects are to be launched in the third quarter of 2004.

Brazil is another country where satellite has been open by the regulatory body Anatel – www.anatel.gov.br. Today any satellite operator could provide services in Brazil but is required to pay a license fee and need to have a local representative or open a local office. Today Anatel has 32 foreign satellite authorized to provide service in Brazil that comply with the regulatory environment.

Among the main projects in Brazil are: Petrobras (major Brazilian oil company) with a network of 800 sites with more than 12 different applications). Telemar a regional telco that cover almost 50% of the region which include the Amazon Forest is required by Anatel to provide service in more than 4000 cities by 2005. The project will bring up to 50% of the locations with satellite reach but could end with some provider to offer 100% with satellite solutions. In addition the Brazilian Government is planning to open new licenses for Data Services that can provide IP access to all schools in Brazil.

In the Caribbean Region several government are looking to implement Internet services via satellite for schools, colleges and universities . As example Puerto Rico just signed a new Internet School program with a satellite provider using IP base VSAT technology supplied by iDirect to provide Internet access to more than 1,600 schools. The majority of the countries in the Caribbean region at this moment are evaluating the opening of the market for satellite services.

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Mexico after a long period of satellite monopoly with Satmex, opened its market to other service provider two years ago. Now International satellite carrier are authorized to provide satellite services in the country. Mexico has been implementing VSAT for school and universities for the last 10 year with funding by the Federal Government for new providers and with the Internet expansion more projects are on the way to provide Internet for schools and libraries throughout Mexico.

Rounding up the region, Peru, Colombia and the other Andean countries are probably the least open markets, but are also considering various satellite options for distance education and other applications.

In conclusion, CITEL has been very vital in promoting regulatory reform and opening the markets for satellite services in Latin America. Last year CITEL adopted a set of recommendations by the GVF, which would greatly help further the opening up of the Latin American market. To wit:

CITEL RECOMMENDATIONS FOR ALL THE REGULATORY BODIES IN LATIN AMERICA:

1. CITEL Administrations encourage the development of broadband via satellite by implementing appropriate and flexible regulatory frameworks that will allow for the rapid implementation, access and use of broadband services.

2. CITEL Administrations consider the use of broadband as an important way to support integration and national growth, within their economic and social development projects.

3. CITEL electronic forum (REGSAT) be maintained, having the purpose of preparing draft guidelines for the implementation of national regulations that favor the deployment of the broadband systems by satellite.

4. that, in order to encourage the deployment of satellite infrastructure, particularly for broadband services, pursuant to the Resolutions issued by the 2001 Summit of the Americas, "ministries or departments responsible for telecommunications and appropriate regulatory bodies" without prejudice to the application of the national regulations associated with the provision of services and the installation and operation of networks, consider the possibility of including in their national regulations concepts associated with:

a) "Block" or "Generic" Earth Station Licensing: To the extent possible, streamline licensing procedures to facilitate the rapid deployment of satellite earth stations and services. For satellite frequency bands that are not shared with other services, streamline satellite earth station licensing by establishing a mechanism to authorize large numbers of technically-identical satellite earth stations in a single license or in "blocks". Such a license could be site-specific or non-site-specific (the most efficient approach).

b) Regional or International Hub Requirements: Permit, to the extent possible, the use of systems whose HUB stations are located anywhere in the region, while

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recognizing the needs of some Administrations for user control and security.

c) Availability of Procedures, Regulations, and Applications On-Line: In conformance with the legislative and regulatory framework in each nation, make current regulations and regulatory requirements publicly available online, and establish mechanisms that permit the electronic application and licensing for satellite earth stations. Such licensing can accommodate site-specific and non-site-specific Block or Generic Earth Station Licensing.

d) Landing Rights: Minimize regulatory requirements for landing rights, taking into account the technical information that is already publicly available from the ITU for satellite network coordination, and the space station licensing process undertaken by the notifying Administration.

e) Local Presence Requirements: To the extent allowed by national laws, minimize the local presence requirements in-country.

f) Consumer Protection / Public Safety: Promote public information on customer rights, quality of service, authorized operators, public safety and health protection.

g) Additional Means of Promoting Satellite Broadband Deployment: Develop programs to foster the deployment of satellite services to rural, remote, underserved communities, and for other special social purposes. Successful programs have included "capacity credits", tax incentives, loan programs, etc.

h) Equipment Certification: Increase awareness of and recognize the work done by PCC.I on the CITEL Mutual Recognition Agreement (MRA) which seeks to eliminate the duplication of the certification processes in Member States.

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

MARKET INTELLIGENCE

Driving the Middle East's and North Africa's Broadband Growth

By **Martin Jarrold**
Director, International Programs, GVF

Right now an increasingly rich supply of satellite capacity is parked above the Middle East and North Africa, and broadband satellite is high on the communications agenda of a number of countries across the region. But, this is a region that encompasses much diversity in terms of the size and structure of the various national economies, of levels of socio-economic development, and of geography, all of which are important factors affecting demand for and deployment of the means of telecommunications – wired or wireless, terrestrial or satellite.

Generally, in the world of government policy and regulation, new and increasingly progressive national strategies that recognise the economic and social significance of satellite-based service provision have fostered a more favourable climate within which, often local, companies have come to market with cost-effective, fixed and mobile, communications solutions. Though by no means a universal regional trend – ambiguous regulatory frameworks exist in the Middle East as elsewhere in the world – it is one that contributes to the strengthening of trade, attracts foreign inward investment, creates new jobs, and challenges the *digital divide*.

There is, and there will continue to be, more than just one mid-Eastern path to satellite broadband. Indeed, important as the general trends are, we cannot ignore the realities of one particular corner of the region, Iraq. There the combined legacy of military conflict together with the practicalities of what has been termed "national reconstruction" is a significant lead-driver in the application of satellite solutions to connectivity demand.

In a different national context, detailed research of the Saudi Arabian satellite market conducted in 2003 and published earlier this year [1] revealed a variety of hybrid service providers, though it was clearly indicated that the ability of two-way satellite-based Internet access to bypass official Internet filtering mechanisms is likely to severely limit market uptake in the cybercafé environment, though not in the oil sector and in the trading houses which "are relatively free to use both conventional corporate VSAT networks and two-way satellite-based Internet access because they pose no significant threat to religious and political sensibilities." [2] A tally of the satellite broadband installed base in the Kingdom at that time put the number at around 1000 sites.

Back in Iraq, the "national reconstruction" *vertical market*, which encompasses such convergent applications as satellite-based WiFi and satellite-based GSM (amongst others) and includes the development of e-government, e-education and e-health networks as well as essential industrial – e.g. oil & gas – communications infrastructure, illustrates how some very specific geo-political circumstances can both accelerate and focus demand for satellite provision. Analysis of Iraq's installed base of satellite broadband terminals at the end of 2003 indicated some 1,900 terminals in service with a significant proportion of this figure installed in the Kurdish region of northern Iraq. [3]

"Fixed line telephony in Baghdad and GSM telephony throughout non-Kurdish Iraq were way short of meeting demand in 2003" [4] according to the DTT Consulting report, and in consequence a major driver behind the cybercafé phenomenon in the capital and elsewhere is voice over IP (VoIP) rather than demand for email and web access alone. Given the continuing paucity of investment in Iraq's fixed line infrastructure – likely to continue until the security situation improves – the nascent domestic Internet sector is attempting to respond to growing demand for services and is looking to alternative local loop infrastructure to reach the end user community, employing satellite to connect to the international backbone. The precise magnitude and structure of this demand is difficult to determine, but originates from a variety of end-user types: not only Internet cafés, but also mini-ISPs, government ministries and NGOs, colleges and universities (the CPA is reported to have funded satellite-based Internet access on a number of Iraq's university campuses), (re-) construction contractors, the oil and gas sector, and the military. The latter typically uses satellite broadband terminals for Internet access, VoIP and videoconferencing for morale, welfare and recreational purposes rather than core military communications.

Footnotes
[1] ***Broadband via Satellite 2004*** / © DTT Consulting 2004 / www.spotbeam.com
[2] Quoted *ibid.*
[3] *ibid.*
[4] Quoted *ibid.*

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Editorial Note

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The Global VSAT Forum is an association of key companies involved in the business of delivering advanced digital fixed satellite systems and services to consumers, and commercial and government enterprises worldwide. The Forum is independent and non-profit and has a global remit. It is also non-partisan - any companies or organisations with an interest in the VSAT industry are encouraged to join. For more information go to www.gvf.org or e-mail: helen.jameson@gvf.org

New Satellite Summit Initiative Comes to Dubai… this October

MENASAT – the Middle East & North Africa Satellite Summit – is a joint initiative of the Global VSAT Forum (GVF) and CWC Associates Limited. This intensive two-day Summit will take place alongside the largest annual IT event in the Middle East – GITEX – and will address issues surrounding the major satellite business opportunities across the region: from government networks to financial services, from oil & gas to the reconstruction of Iraq.

Over 5-6 October 2004 the programme will include such features as:

- A Telecom Sector Report: The Rise of Arabian Satellite Broadband Services
- A Market Access Roundtable: National Links, International Connectivity
- An End-User Profile: Health, Education & Everything in Between
- A Country Roundtable: The Suitability of Satellite Solutions to Iran
- Rebuilding a Nation… Via Satellite
- A Satellite Operators Roundtable: Delivering the Promise of Regional Connectivity
- Applications Focus: Government Networks
- Satellite-based WiFi & Satellite-based GSM
- Case Study: Banking on Satellite Networks
- The PTT Perspective: The Shape of Satellite Services to Come

Who Should Attend?

Government Regulators – Satellite Operators – System Integrators – VSAT Management Operations – Security/Military Services – Transponder Brokers/Resellers – Installation/Maintenance Services – Corporate Users – Distributors – Transmission Services – Technical & Consulting Services – Uplink Facilities – Financial Institutions – Ground Equipment Manufacturers – Insurance Services

Contact Us

Visit the MENASAT web site at www.thecwcgroup.com or contact CWC via email at menasat@thecwcgroup.com and telephone + 44 20 7089 4154. Contact the GVF at david.hartshorn@gvf.org and telephone + 44 1727 884739, martin.jarrold@gvf.org and telephone + 44 1727 884513 or helen.jameson@gvf.org and telephone + 44 1727 884627.

STOCK MONITOR

Company	Symbol	Price (July 1)	52-week Range
APT SATELLITE HOLDINGS	ATS	1.95	1.59-4.60
ANDREW CORP.	ANDW	19.8	8.80 - 21.67
ASIASAT	SAT	16.85	14.31 - 22.80
BALL AEROSPACE	BLL	70.95	42.30 - 72.46
BOEING	BA	49.69	31.00 - 51.49
BRITISH SKY BROADCASTING	BSY	45.40	40.07 - 59.24
CALIFORNIA AMPLIFIER, INC.	CAMP	7.36	3.19 - 17.20
COM DEV INTL	CDV.TO	3.64	1.23 - 3.80
COMTECH TELECOMMUNICATIONS.	CMTL	21.73	13.62- 39.52
DIRECTV GROUP	DTV	17.26	14.70 - 18.81
ECHOSTAR	DISH	30.60	29.27 - 41.00
FREQUENCY ELECTRONICS INC.	FEI	14.00	8.96-17.13
GILAT SATELLITE NETWORKS	GILTF	5.50	4.50 - 9.86
GLOBECOMM SYSTEMS INC	GCOM	5.03	2.99 - 7.29
HARRIS CORPORATION	HRS	50.26	28.70 - 51.19
HONEYWELL SPACE SYSTEMS	HON	36.14	25.94 - 37.65
INTEGRAL SYSTEMS INC	ISYS	16.03	15.29 - 22.12
KVH INDUSTRIES INC	KVHI	12.69	12.36 - 34.729
L3 COMMUNICATIONS	LLL	65.43	41.63 - 64.32
LOCKHEED MARTIN	LMT	51.67	43.10 - 55.00
NEW SKIES SATELLITES	NSK	7.71	4.49 - 8.16
NEWS CORP	NWS	35.33	29.80 - 39.74
NORSAT INTERNATIONAL INC.	NSATF.OB	0.58	0.38 - 1.03
NTL	NTLI	57.08	3.76 - 20.15
ORBITAL SCIENCES CORPORATION	ORB	13.60	7.11-14.19
PANAMSAT	SPOT	23.15	13.80 - 26.01
PASIFIK SATELIT NUSANTARA	PSNRY.PK	0.15	N/A
PEGASUS COMMUNICATIONS	PGTV	23.04	11.70 - 51.00
QUALCOMM, INC.	QCOM	72.11	34.33- 73.33
RADYNE COMSTREAM	RADN	8.01	2.02 - 13.426
SCIENTIFIC-ATLANTA	SFA	33.15	19.46 - 38.59
SIRIUS SATELLITE RADIO INC.	SIRI	3.022	1.40 - 4.20
SES GLOBAL	SDSFa.F	6.75	5.17 - 8.85
TRIMBLE NAVIGATION	TRMB	27.20	13.48- 28.78
VIASAT	VSAT	23.99	12.20 - 28.91
XM SATELLITE RADIO	XMSR	27.21	10.02 - 30.96

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