

Worldwide Satellite Magazine

Vol. 4 No. 2



Hybrid Networks

May 2006

Your Satellite Connection to the World

SES AGLOBAL

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SES Global may not be content with second place after the Intelsat-PanAmSat merger. Reports indicate that they may still be looking out for more acquisitions.



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bv Bernardo Schneiderman

Radio Frequency Identification or RFID has many potential satellite applications that present new opportunities.



RFID: Potential 38 / Hybrid Satellite/ Wireless Networks: **Fusion or Confusion?**

by Bruce R. Elbert

There are many technologies and architectures for both halves of this kind of hybrid network. The permutations themselves would take up an encyclopedia volume just for definition purposes; yet, only a handful present real opportunity to those that pursue them, or threats to those who stick to their knitting.

EXECUTIVE SPOTLIGHTS



With Intelsat's purchase of PanAmSat, Intelsat

will be the biggest satellite operator in the world again, after it lost its preeminent position to SES Global in 2001. Loral Skynet, however, just got back into the North American fixed satellite services market, after the expiration of a non-compete clause with Intelsat after it sold all its North American assets to Intelsat two years ago.

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NOTE FROM THE EDITOR

The Satellite Industry is Buzzing



A the recently-concluded National Association of Broadcasters (NAB) convention in Las Vegas the industry was buzzing with a panoply of new applications and opportunities, particularly in IP-based services. The buzz was not just triple play--voice, data and video, but *quadruple* play-with the mobile element added. Unlike in the '90s when the internet started to boom, these new applications and opportunities feel more real and down-to-

earth. I'm very bullish about the new few years for the industry.

Meanwhile, the consolidation in the global satellite operators market is still heating up. Our Editor for Europe, Chris Forrester in his article on page 33, indicates that there are signs that SES Global is still looking for more acquisitons, perhaps to regain the number one spot that it will lose once the Intelsat-PanAmSat merger closes. In this issue we interview both the CEOs of Intelsat and Loral Skynet (page 42) and what they have to say is insightful on the way the bigger satellite operators are facing the challenges in the market.

In this issue we also have an 11-page guide (starting on page 60 to ISCe 2006 which will be held in San Diego, California next month from June 13-15. ISCe will be held in conjunction with several highly-attended conferences such as the American Institute of Aeronautics and Astronautics (AIAA) International Communications Satellite Systems Conference (ICSSC) and the Carmel Group's Cable, Satellite and Telco Forum: The Five Burning Questions, among others. The theme of this year's ISCe, happens to be the focus of this month's issue as well-hybrid networks. However, the ISCE 2006 is really like several shows in one, and you can get a very good picture of everything that is happening in the industry in one show. Also, California in June is not so bad and Satnews will be having its traditional wine reception to showcase California wines at ISCe (we are based in the wine-producing Sonoma region of California). So it's a must-attend event. We hope to see you all there next month.

Finally, don't forget to fill our reader survey on page 5 and win a chance for a case of fine Sonoma wines. We really love to hear your comments, suggestions and views about our publication so that we can continually improve it to better serve your needs.

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CALENDAR OF EVENTS 2006



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MAY

May 4-5, Copenhagen Business School, Copenhagen, Denmark European Satellite Cultures Conference Julie Uldam Tel: +45 3815 3332 / Email: <u>esc@cbs.dk</u> Website: <u>www.cbs.dk/esc</u>

May 15-17, Cairo, Egyt Oil & Gas Communications: Africa and the Middle East Web: <u>www.gvf-events.org/2.html</u> Email: <u>martin.jarrold@gvf.org</u> or <u>paul.stahl@uk-emp.co.uk</u>

JUNE

June 12-14, Washington, D.C., USA MILSAT 2006 Warren Gollop Tel: +1-246-417-5328 / Fax: +1-888-844-4901 Email: defense@marcusevansbb.com Website: www.marcusevansbb.com/MILSAT

June 13-15, San Diego Hilton Resort at Mission Bay, San Diego, CA, USA ISCe Conference and Expo Hannover Fairs USA Phone: +1 310 410 9191 / Fax: +1 310 410 9396 Email: info@isce.com Website: www.isce.com

June 19, Singapore

CASBAA Satellite Industry Forum 2006 Tammy Choy Tel: +852-28549913 / Fax: +852-28549530 Email: tammychoy@casbaa.com Website: www.casbaa.com

June 19-23, Singapore BroadcastAsia 2006 Tel: +65 6738 6776 / Fax: +65 6732 6776 Email: <u>events@sesallworld.com</u> Website: <u>www.broadcast-asia.com/index2.htm</u>

June 20-23, Singapore CommunicAsia 2006 Tel: +65 6738 6776 / Fax: +65 6732 6776 Email: min@sesallworld.com Website: www.communicasia.com June 26, Savoy Place, London, UK The Institution of Engineering and Technology Seminar onMilitary SatComs 2006 Tel: +44 (0) 1438 765567 / Fax: +44 (0) 1438 765 659

Email: <u>Eventsa4@theiet.org</u> Web: <u>www.iee.org/Events/MilitarySatCom.cfm</u>

JULY

July 11-13, Stockholm, Sweden 2006 SUIRG Interference Conference/Meeting Robert W. Ames Jr. Tel: +1-941-575-1277 / Fax: +1-941-575-7048 Email: bobames@suirg.org / Website: www.suirg.org

July 24-26, Virginia, U.S.A. Geospatial Intelligence 2006 Tel: +800-882-8684 / Fax: +1-973 256 0205 Email: <u>info@idga.org</u> Website: <u>www.idga.org/na-2410-02</u>

AUGUST

Aug. 22-26, Beijing, China BIRTV 2006 Tel: +86 10 86093207 or 86092783 ext. 801 Fax: +86 10 86093790 Email: <u>birtv@birtv.com</u> Website: <u>www.birtv.com/english/about.asp</u>

SEPTEMBER

Sept. 7-11, RAI Convention Centre, Amsterdam IBC2006 Conference Tel: +44 (0)20 7611 7500 / Fax: +44 (0)20 7611 7530 Email: show@ibc.org Website: www.ibc.org

Sept. 26-28, Hotel Lotte World, Seoul, Korea APSCC 2006 Satellite Conference and Exhibition Tel: +82 2 508 4883~5 / Fax: +82 2 568 8593 Email: <u>info@apscc.or.kr</u> Website: <u>www.apscc.or.kr/event/apscc2006.asp</u>

OCTOBER

Oct. 19 - 21, World Trade Centre, Mumbai, India. Broadcast India 2006 Exhibition & Symposium Kavita Meer Tel: 91 22 2215 1396/2215 2721 Fax: 91 22 2215 1269 Mobile: 98200 56060 Email: saicomtradefairs@vsnl.com Website: www.broadcastindiashow.com

READER SURVEY



Your opinion matters! Complete the survey below, and return via email, fax, or mail.

You may also fill in this survey online – Please - Click Here

You will be entered into our drawing for a free selection of the best wine in our area. The winner will be posted in the July/August issue of SatMagazine.com.

Information about You:	And your Company:	We need your Opinion:
Name:	What best describes your firm's business:	How often do you read SatMagazine?
Job Title:	Broadband Services	What do you like best about SatMagazine?
Company:	 End User Broadcasting/Cable 	
E-Mail:	□ Satellite Industry (specify)	What could we do to enhance SatMagazine for
Your Favorite Varietal?	 Operator/carrier Transmission services Talecommunications Carrier 	you personally?
 Cabernet Sauvigon Zinfandel Merlot Chardonney 	 Satellite Equipment Manufacturer Satellite Equipment Distributor/Dealer Business Information 	What feature articles would you like to see in
Other:	Services Government Agency	future issues?
Click Here – to fill in this survey online.		

Or please fax this form back now to our customer services department at (707) 939-9235 or post to: SatNews Publishers, 800 Siesta Way, Sonoma, CA 95476

ISCe 2006 Conference to Focus on

Satellite and Hybrid Network Solutions

ISCe Conference and Expo 2006

June 13-15, 2006, San Diego Hilton Resort at Misson Bay, California

Only one more month to go before ISCe 2006 in San Diego, California. ISCe 2006 will focus on Satellite and Hybrid Solutions for the **enterprise**, **entertainment and media**, and **government/military markets**. "Satellite and hybrid solutions provide a vital service for the enterprise, entertainment and media, and government/military markets. ISCe 2006 will focus on the value and cost-effective solutions that satellite and hybrid networks (cable, telcos and utilities) provide to the end user. There simply is no other conference that offers this type of access to so many senior executives," said David Bross, Chairman of ISCe 2006.

Now in its fifth year, ISC, will be jointly holding the 5th Annual ISCe Conference and Expo with the 23rd American Institute of Aeronautics and Astronautics (AIAA) International Communications Satellite Systems Conference (ICSSC) from June 13-15 at the San Diego Hilton Resort in San Diego, California. To give you a comprehensive view of the event, follows is the latest exhibition plan as well as the complete confrence program to date. We hope to see you all at ISCe 2006! **SSM**





ISCe Conference Program

(as May 3, 2006)

Tuesday, June 13, 2006

FEATURED EVEN

GVF Wireless Workshop – "Fixed, Mobile & Everything in Between" (Sponsorship Available)

9:00 am - 5:30 pm

9:00 am - 9:15 am

Session GVF1: Introduction - Can Wireless and Satellite Be Connected?

As the principal satellite-industry conference on the West Coast, ISCe provides an opportunity to review how to achieve greater integration and collaboration with land-based wireless technologies and services. Is this desirable or even possible? The GVF has organized the day into a combination of in-depth presentations on the nuts and bolts of wireless mastery and round-table discussions involving individuals and companies that are well-positioned for things to come. The format is designed to provide new insights into these potentialities and allow the audience to interact with presenters and each other.

Moderator: **Bruce Elbert**, Chair, GVF Technology Working Group, and President, Application Technology Strategy, Inc. (USA)

9:15 am - 10:00 am

Session GVF2: Hybrid Wireless: Will Potential Buyers Love It?

Whether they are small, medium or large, enterprises with requirements for competitive telecommunications are increasingly opting for hybrid wireless solutions that draw upon the relative strengths of satellite, cellular, Wi-Fi, WiMAX and other key technologies. Or are they? Where does each technology best fit and how big are the markets? Which technologies are complementary, and which technologies will compete? And to what extent are different industry sectors able to get along? Our keynote presenter will provide ideas and suggest answers to these questions.

Moderator:Christopher Baugh, President – NSRPanelists:Brian Weimer, Counsel – Latham & Watkins

10:15 am - 11:55 am

Session GVF3: Building the Complete Wireless Portfolio – Is Satellite Broadband a Part?

Satellite TV operators and other established service providers are looking to add two-way broadband connectivity and mobile access so they can deliver a complete quadruple-play to their customers. Existing resale agreements with AT&T and Verizon may not be sufficient, as these telcos seek to offer their own IPTV services, while Sprint Nextel has recently partnered with a consortium of cable operators. If working with existing cellular operators is therefore unattractive, could building a greenfield network using new technologies such as Wi-Max be the best choice? Will ATC allow terrestrial re-use of MSS spectrum for such networks? How much spectrum is really needed? Is there a role for mobile satellite access as a service differentiator? Are there other spectrum options in the 2.3GHz and 2.5GHz bands? What mix of fixed and mobile devices will Wi-Max be optimized to support? This session will answer these and other questions.

ISCe

Satellite & Communications

a **CeBIT** Event

Moderator:	Tim Farrar , President – TMF Associates
Panelists:	Brian Deobald, Vice President of Business
	Development – MSV
	Benjamin Finzi, President, Americas
	Operations – WiNetworks
	John Norin, Vice President – DirecTv Inc.

1:45 pm - 3 pm

Session GVF4: Wireless Infrastructure: Reaching the First (and Last) Mile

Satellite-based cellular backhaul to the PSTN is a well-established application – and it's going strong. As satellite links extend the reach of competing terrestrial wireless services, are rural regions finally within reach? And is there a compelling business model for satellite/terrestrial hybrid solutions in developing countries? This roundtable will examine the latest trends and evaluate whether such solutions are sustainable.

Moderator:	Bernardo Schneiderman, President,
	Telematics Business Consultants
Panelists:	Bruce Bednarski, Senior Vice President of
	Business Development – iDirect Technologies
	Steve Blum, President – Tellus Venture
	Associates
	Rory Eddings, Andrew Corp.

3:15 pm - 4:30 pm

Session GVF5: IP and the "New" Bottom Line

Times are changing ... fast. IP-based wireless platforms are increasingly being provided to end users of every stripe... and

the math is changing. But at some level, profit is still profit and the fundamentals still apply. Attend this roundtable to hear how IP-based considerations cut across wireless technologies and have forced a rethink of service offerings and revenue potential.

Moderator: Panelists: David Hartshorn, Secretary General – GVF Bruce Elbert, President – Application Technology Strategy, Inc. Mike Hinz, President – YR20 John Janka, Partner – Latham & Watkins

4:30 pm - 5:15 pm

Session GVF6: How Do We Reach New Government Users? Government usage of commercial satellite capacity and services has blossomed during the past few years. With proven value as a primary communications means in case of emergencies and ongoing logistic support, government users fully comprehend the basic value of our medium. The challenge going forward is how does the VSAT industry maintain and even grow the government sector? Are there still unmet service needs that must be satisfied? Join this panel of experts representing service providers, end-users and manufacturers for stimulating discussions and insights into past successes, lessons learned and the challenges ahead.

Moderator:	John Puetz , President – MasterWorks
	Communications
Panelists:	Bruce Guillory, Global Business Develop
	ment – CapRock Communications
	Rick Joyce, Managing Director, Broadband
	Network Services – ViaSat, Inc.
	John Ratigan, Vice President Federal Sales
	– iDirect Technologies

5:15 pm – 5:30 pm Session GVF7: Closing of GVF Wireless Workshop

Moderator: **Bruce Elbert**, Chair, GVF Technology Working Group, and President - Application Technology Strategy, Inc. (USA)

Exhibitor Pavilion Open

(*iDirect Technologies*) 10:00 am – 5:30 pm Exhibitor Pavilion

Coffee Break

(Sponsorship Available) 10:00 am – 10:30 am % Exhibitor Pavilion

Product Demonstration Program 10:30 am – 12:00 pm Exhibitor Pavilion

Space & Security Forum

(Sponsored by California Space Authority) 10:30 am – 5:30 pm Capri Room

Welcome: TBD

Keynote:

Maj. Gen. James Armor, Jr., Director– National Space Security Office

Session SS1: Transforming Space & Integrating the Battlefield

As the U.S. and its allies continue to transform their militaries, satcom systems will support new capabilities for information sharing, time-sensitive targeting and communications on the move. Achieving this transformation requires viewing satellite communications links both as a capability to be integrated with the warfighter and as a vital network to be protected. This panel will examine approaches for transforming the full range of satcom capabilities for U.S. and coalition military operations.

Moderator:	Richard Buenneke, Sr. Policy Analyst, National Space Systems Engineering – The Aerospace Corp.
Panelists:	Dr. Denis Curtin , Chief Operating Officer, Xtar LLC
	Peter Hadinger . Director, Communications
	Initiatives, Northrop Grumman Space Tech nologies
	COL Patrick Rayermann, Chief, Space &
	Missile Defense Division, G-35, Headquarters,
	U.S. Department of the Army
	Robert Tarleton, Director, Communications
	Functional Integration Office - National
	Security Space Office (NSSO)

Session SS2: Help from Space! Hybrid Solutions for First Responders

In practically any emergency situation, whether due to natural causes or otherwise, the foremost requirement is to re-establish communications to the affected areas and communities. First Responders need flexible and adaptable communication links capable of operating with no or little local infrastructure. This must-attend panel will include representatives of police and other regional and national agencies to highlight what is needed and under what environmental conditions. Panel members will present solutions that can provide the much needed communication capabilities via satellites and hybrid networks. Modern sensor-based networks with the ability to constantly monitor infrastructures as well as the first responders themselves will also be covered in this session.

Moderator:	David Cavossa, Executive Director –
	Satellite Industry Association
	DK Sachdev , President – SpaceTel
	Consultancy
Panelists:	Carson Agnew, President and Chief Operat
	ing Officer – Mobile Satellite Ventures
	Richard DalBello, Vice President Govern
	ment Affairs – Intelsat General Corp.
	Jon Metzler, Director of Business Develop-
	ment - Rosum Corp.
	Joe Polastre, CEO – Moteiv
	Carl Williams, Senior Policy Director –
	California Space Authority

Session SS3: The Next Horizon: New and Evolving Commercial Space Markets

What are the drivers in the re-emerging commercial space market? Which new businesses hold the most promise in this recovering market, and what technologies are key to the success of these new business? This panel of technology and market experts will address these questions and share their perspectives and insights regarding which are the key technology drivers for continued growth in the commercial markets.

Moderator:	Melissa Farrell, President & CEO – Stellar
	Solutions Aerospace Ltd.
Panelists:	Chris Hoeber, Executive Vice President,
	Engineering - Space Systems/Loral
	Marty Neilsen, Director of Business Develop
	ment - Globalstar

The Carmel Group's Cable, Satellite & Telco EntertainmentForum(Sponsored by SES Americom)8:00 am – 9:05 amTerrazza Ballroom

9:00 am - 10:00 am

Session CG1: Content Innovation: Looking Beyond the Box This session focuses on the software side of the business of cable, satellite, telco, utilities, and mobile services, featuring a frank and provocative discussion about the content and entertainment services and applications that service providers are rapidly adopting. Content is being delivered anywhere, all the time, to anyone! This session looks from both the content and service providers' perspectives, focusing on the business models and related issues.

Moderator:	Sean Badding, President and Senior Analyst
	- The Carmel Group

Panelists: Andy Dale, CEO - Outdoor Channel

Todd Goodnight, Senior Director, Business Alliances, Product Management, Consumer Electronics Division – Sirius Satellite Radio Charles Prast, CEO - ITVN Jonathan Shair, Vice-President - Programming, Planning and Scheduling-STARZ

10:00 am – 10:30 am Coffee Break in Exhibitor Pavilion

10:30 am - 12:00 pm

Session CG2: IPTV Strategies for Success!

Telcos see Internet Protocol TV (IPTV) as a critical triple play service and the chance to regain a dominant place in the telecom market. But is it? Are telcos playing catch-up and need to understand not only the opportunities, but also the challenges and uncertainties? Or is this technology a Next Holy Grail? Come learn from this technology-focused panel and hear what key executives are saying about the technology, business, marketing and regulatory realities underlying this digital medium, and its impact on telcos and the competitors. Does IPTV justify — and can it handle — the current industry hype? How does the competition react?

Moderator:	Sean Badding, President and Senior Analyst
	- The Carmel Group
Panelists:	Ed Grazyk, Director, Digital - Microsoft
	Bryan McGuirk, President, Media Solutions
	– SES Americom
	Brad Siebert, Director - Intelsat
	Ian Tapp, Vice-President, Market Develop
	ment-NDS
	Jeff Van Cura, Senior Director, Strategic
	Solutions-Alcatel North America

1:30 p.m. - 2:30 pm

Session CG3: Broadband: The Top 10 Drivers for 2007 In the current economic climate, operators are making careful decisions about how and where they are expanding broadband services, and which business models will be strengthening their bottom lines. Broadband commoditization and the price erosion of Internet access services are driving operators to seek new revenue streams by offering enhanced services, such as VoIP, video telephony, broadcast video and gaming. Will this be enough for satellite operators to differentiate themselves from their rivals? Will consumers be attracted to these new, bundled services? This distribution-based session examines the market drivers, the available technologies (i.e., terrestrial, satellite, and

wireless), and the best business models producing the best results.

Moderator:	Harry Thibedeau, Manager of Industry and
	Technical Affairs – NRTC
Panelists:	Brent Bruun, President, Enterprise Solutions
	– SES Americom
	Robb Chandhok, Vice-President, Engineer
	ing and Strategy-Qualcomm
	Josh Goldman, CEO - Akimbo
	Jeremy Toeman, Vice President of Market
	Development – Sling Media

2:30 pm - 3:30 pm

Session CG4: Advanced Services: Shaking Out the Hype Included in this "Advanced Services" basket are IPTV, VOD, DVR and gaming. These new, advanced applications are revolutionizing—and complicating—business models for every operator, on a global scale. Indeed, just a couple of the more critically disruptive services include DVRs and VoIP, which have become very popular with mainstream consumers. Service providers have been attempting to capitalize on such areas, but are they underestimating the business and technology challenges facing the markets in the next two years? What partnerships are lining up? Where do advertisers fit in?

Moderator:	Steve Symonds , President-Symonds and Associates
Panelists:	Scott Crowder, COO-Entriq John Roberts, Senior Vice President, Interac
	tive and Online Entertainment-Game Show Network Dean Rockwell Vice President, General
	Manager, Digital Media Networks-Scientific Atlanta
	Alan Young , Chief Technology Officer-SES Americom

3:30 pm – 4:00 pm **Refreshment Break in Exhibitor Pavilion** (Sponsored by Mobile Satellite Ventures)

4:00 pm - 5:30 pm

Session CG5: CEOs: Breaking the Rules & Making It Happen For 10 years, this renowned CEO session has become a hallmark of events organized by The Carmel Group. This year will be no exception. A mixture of the best and the brightest will engage one another and their audience on the most crucial issues facing the multi-channel market. This session will cover: the next-generation of devices, content and business models, advertising, content, distribution, operators, technology, legal/ regulatory...you name the topic, these business leaders are going to tackle it! This is a can't-miss final session.

Moderator:	Jimmy Schaeffler, Chairman and CEO – The
	Carmel Group
Panelists:	Dr. Philip Alvelda, CEO-MobiTV
	Eric Cooney, CEO - Tandberg Television
	Greg Gudorf, President& COO-Digeo
	Tres Izzards, CEO – MovieBeam
	Jim Ramo , CEO – Movielink

ISCe Welcome Luncheon/AIAA Keynote Speech

(Co-Sponsored by the California Space Authority) 12:00 pm – 1:30 pm % Monte Carlo / St. Tropez / Riviera Rooms

Welcome:The Honorable Andrea Seastrand, Executive
Director – California Space Authority

AIAA/ICSSC Speaker Introduction: Sumner Matsunaga, General Chair -- ICSSC

Keynote Speaker: Gen. Lance Lord (Ret.), Former Commander, Air Force Space Command

WTA Workshop – "Translating the Trends: What the Big Market Developments of the Year Will Mean to Your Company" (Sponsorship Available) 1:30 pm – 5:30 pm Exhibitor Pavilion

This half-day workshop is for satellite communications service and technology providers who face strategic decisions about responding to the market developments making headlines today. Equally valuable for end-user executives deciding where to spend scarce telecom and technology dollars, the workshop will connect the dots between developments in the news – from mergers & acquisitions to the latest technology platforms – and their businesses. Which trends do they need to follow? What will be the sometimes surprising impact of industry restructuring? How fast will customers adopt new technologies and turn them into "must-have" services and products?

The workshop, presented by the World Teleport Association (WTA), includes a top-level review of the most important market developments and roundtable discussions of their impacts by senior service and technology executives. Since 1985, the WTA has been the only nonprofit trade association that focuses on the business of satellite communications from the ground up.

Welcome and Introduction

Speaker:

Robert Bell, Executive Director – World Teleport Association (WTA)

Session WTA1: WTA Market Presentation - The Top Ten Trends You Need to Watch

Speaker: Lon Rains, Editor - Space News

Session WTA2: Responding to Changing Markets and Intensifying Competition for New Customers

Moderator:	Robert Bell , Executive Director – World
	Teleport Association (WTA)
Panelists:	Jerry Chase, CEO - Terayon Communications
	Systems
	Jonathan Feldman, Senior Vice President,
	Business Development – GlobeCast
	Jonathan Kirchner, Vice President, Market
	ing & Business Development - Loral Skynet
	Jeff Roberts, Vice President, Marketing &
	Sales - JSAT International, Inc.
	Jon Romm, President, Media Sales - Intelsat

Session WTA3: Today's Technologies That Grow Tomorrow's Market

Robert Bell , Executive Director – World
Teleport Association (WTA)
Stefan Jucken, Director Sales Americas - ND
SatCom AG
Rick Segil, Vice President, Marketing - Path
1 Network Technologies
Steve Yablonski, Vice President - Globecomm
Systems, Inc.
Alan Young, CTO - SES Americom

Refreshment Break

(Sponsored by MSV) 3:30 pm – 4:00 pm % Exhibitor Pavilion

SSPI "Beach Blast" Welcome Reception

(Co-Sponsored by GlobeCast, Space Systems/Loral, ViaSat) 5:30 pm – 7:00 pm Hilton Hotel Beach Lagoon

Tuesday, June 14, 2006

VIP Breakfast (by Invitation Only) (Sponsorship Booz Allen Hamilton) 7:30 am – 8:30 am Exhibitor Pavilion

SIA "State of the Industry" Report 8:30 am – 8:45 am Monte Carlo / St. Tropez / Riviera Rooms **Speaker:** David Cavossa, Executive Director – Satellite Industry Association

Joint CEO Plenary Session

8:45 am - 10:30 am Monte Carlo / St. Tropez / Riviera Rooms

Telecom CEO Roundtable: Integrating Technologies, Serving Markets, Building Profits

In this signature session at ISCe, the top leaders from the telecom and satellite industries gather for this annual round of forecasts and strategies. What will the second half of the year hold for users of telecom services? Will increased competition between terrestrial- and satellite-based technologies continue to benefit end users with better prices and customer service? What effect will continued consolidation have on the market? What are the key new customer markets as well as hot spots for telecom services? Plan on attending this standing-room-only session and find out the tips and tactics that these savvy executives employ to grow their profits, during this highly interactive, audience participation session!

Moderator: Lon Rains, Editor – Space News Patrick Brant, CEO – Loral Skynet Panelists: Mark Dankberg, CEO – ViaSat, Inc. Matthew Flanigan, President – Telecommunications Industry Association (TIA) John Kealey, CEO – *iDirect Technologies* Stephen O'Neill, President, Boeing Satellite Systems International, Inc. **Bob Phillips**, President – National Rural Telecommunications Cooperative (NRTC) Pascale Sourisse, CEO – -Alcatel Alenia Space Andy Sukawaty, Chairman & CEO -Inmarsat

Exhibitor Pavilion Open

(*iDirect Technologies*) 10:30 am – 5:30 pm

Exhibitor Pavilion

Coffee Break

(Sponsored by Stellar Solutions) 10:30 am – 11:00 am % Exhibitor Pavilion

Digital Content & Mobile Forum

(Sponsorship Available) 11:00 am – 5:30 pm Riviera Room

Session WE1: Satellite Mobile Entertainment and Data 11:00 am – 12:00 pm

There is a rapidly growing market for new forms of mobile entertainment, including real time audio and video. Satellite has helped create and define this market through direct to user mobile digital audio and video services. This panel of leading experts will explore the future potential of these services in terms of new satellite bands, new delivery technologies, new business models and new forms of content.

Moderator:	Mark Dankberg, Chairman & CEO - ViaSat
Panelists:	Doug Sobieski, Senior Vice President for
	Wireless Networks - TerreStar Networks Inc.

Session WE3: Watching the Small Screen: Digital Content for the Mobile Platform

$1:30 \, pm - 2:45 \, pm$

It's hard to believe that the cell phone explosion of yesterday has now surfaced as the most dominant strength in the entertainment industry, rivaling TV and DVD as consumers' leading choice. Mobile as a fully functional entertainment provider news, music, sports, and video - has replaced mobile as a simple communication tool. In this session, we have gathered a seasoned group of executives from the Entertainment, TV and Mobile industries who will explore several key topics focusing on content for the mobile platform. What compelling features will create a competitive advantage? How important is content? Selling + Celebrity = Sellebrity How important are icons in the success of these mobile networks? Will the DVB-H market capture enough consumer interest to achieve positive cash flow? Don't miss this outstanding session highlighting content and the emerging mobile market.

Moderator: Panelists: Gary Hatch, CEO – ATCi Cassandra Cummings, Windows Digtal Media Music and Filmed Entertainment Marketing – Microsoft Kevin Grant, Senior Director of Sales, Americas – MobiTV Jason Kenagy, Vice President Product Management - Media FLO Heidi Lehmann, Vice President, Content Acquisition and Strategy – Third Screen Media Scott Stemmerman, Product Marketing Marketing Manager, Entertainment -- Sprint/ Nextel

Session WE5: And.....Action! Digital Content for Hollywood Takes the Stage 3:15 pm-4:30 pm Digital cinema presents a compelling vision: a revolutionary breakthrough in distribution that will lower costs, improve security and significantly expand opportunities for theater owners and studios – not to mention for satellite and terrestrial service providers that manage and transport the multi-gigabit files. Reality, however, has been slow to catch up as the vision has run head-on into established business interests and technology hurdles. Today, however, the early stages of a digital cinema market are becoming visible through multi-cinema trials and commercial distribution of pre-show content. In this session, a panel of buyers and sellers in this emerging market explore issues of secure transport, network requirements and digital rights management, and provide their forecasts for the next two years.

Moderator:	Robert Bell , Executive Director – Society of Satellite Professionals International and World Teleport Association
Panelists:	Scott Calder , CEO – Mainstream Data George Davis , Senior Vice President, Americas and Asia – Technicolor Network
	Services
	Ken Kirchbaumer, Editorial Director –
	Sports Video Group
	Tony Nguyen , Vice President, Broadcast Operations – The Andrita Studios

Military & Government Requirements Forum (Intelsat General Corp.) 11:00 am – 5:30 pm Capri Room

Session WE2: DoD Net-Centric Operations and Integration: The New Battlefield Frontier

10:45 am - 12:15 pm

The rapid deployment of new technologies in support of Global War on Terror (GWOT) operations in <Iraq> and <<Afghanistan>> has provided the DoD with the opportunity to experience Net-Centric Operations and Integration in a combat environment for the first time. This experience has provided the DoD with a tremendous amount of data with respect to real world implementation of the Net-Centric vision. Additionally, it identified areas where technologies and processes need refinement and improvement. This panel will provide the Services and DoD perspective on how Net-Centricity has evolved to-date and what remains to be addressed in light of lessons learned, including emerging new hostile information warfare threats directed against increasingly complex DoD C4ISR systems.

Moderator:	Art Fritzson , Vice President – Booz Allen
	Hamilton
Panelists:	Bob Maskell, Space Systems Architect –
	Cisco Systems Inc.
	TBD , Vice President – Boeing Satellite
	Systems International, Inc.

Session WE4: Future MILSATCOM Systems: Supporting the Warfighter

1:45 pm – 3:00 pm

New advances in voice, data and video delivery via transformational military communications systems will enable net-centric operations for the deployed warfighter. For Operation Iraqi Freedom, commercial satellite systems supplemented the military communications and provided the majority of the bandwidth. To meet this challenge, the Department of Defense is developing Transformational Satellite Communications Systems (TSAT), Mobile User Objective System (MUOS), Joint Tactical Radio System (JTRS) as part of the Global Information Grid (GIG). With the Congressional Budget Office (CBO) projecting a doubling of military space systems funding by 2011, this panel will provide insight on the technical, budget and integration challenges as they develop systems to ensure continued warfighter information superiority.

Moderator:	Bryan M. Scurry, Deputy, PEO Space
	Systems (Acting), Executive Director –
	SPAWAR Space Field Activity (Acting)
Panelists:	Mike Kern, Sr. Systems Engineer, GIG-
	OASD/NII Office of the Secretary of
	Defense
	Shaum Mittal, Chief, SATCOM Engineering -
	– DISA
	Howard Pace, Deputy Program Manager –
	Joint Tactical Radio System (JTRS)
	Brig. Gen. Ellen Pawlikowski, Program
	Director, MILSATCOM JPO – USAF Space &
	Missile Systems Center
	CAPT. Dave Porter (USN), MUOS Program
	Manager PMW-146
	v

Session WE6: Distributed Connectivity to the Mobile Warfighter

It is understood well how modern warfighters have adopted and mastered "maneuver warfare" tactics on the battlefield. What has not been solved, however, is how the warfighter communicates while maneuvering. What is the impact of distributed C2 whereby the warfighter must now reach not only his fellow fighter nearby, but also receive "intel" from the skies, data from archives half a world away, and SA from echelons of command throughout the battlespace. History has shown us that armies can outrun their supplies. But are we outrunning our communications capabilities? This panel of experts will reveal their solutions to these and other questions affecting connectivity throughout the military.

VADM Lyle Bien (Ret. USN), Former Deputy Moderator: Commander-in-Chief and Chief of Staff of U.S. Space Command D. D'Ambrosio, Vice President – Inmarsat Panelists: Kenneth Callicutt, Director of Capability and Resource Integration – US Strategic Command David Helfgott, President & CEO – Americom **Government Services** RADM Elizabeth Hight, Defense Information Systems Agency (DISA) Principal Director for GIG Operations and Deputy Commander – Joint Task Force-Global Network Operations John Klingelhoeffer, Acting President – Intelsat General Corp. Stuart Linsky, Vice President, SatCom – Northrop Grumman

Session WE7 - Joint Plenary Session: Mobile Satcoms on the Move for DoD & Tinseltown

4:30 pm - 5:45 pm Monte Carlo / St. Tropez Room

Mobile telephony services continue to permeate the global communication infrastructure. The ability to provide secure, quick, affordable voice access to the war fighter involved in a conflict or to the new media covering that conflict has never been easier. Accessible voice communications also have become a critical link in aiding Hollywood to produce its content away from the sound stages of Southern California and in the middle of far-flung previously difficult locations. What is the potential future growth of this market? What are the challenges and opportunities that face both satellite and terrestrial voice services providers? During this must-attend session, our panel of top executives will "lift the curtain" and reveal their keys to success.

Moderator:	Del Smith, Senior Telecommunications
	Counsel – Jones Day
Panelists:	Graham Avis, Vice President and General
	Manager – Hughes Network Systems San
	Diego
	Michael Butler , COO – Inmarsat
	Britt-Carina Horncastle, President – Telenor
	Satellite Services Holdings, Inc.
	Carmen Lloyd, CEO – Iridium Satellite LLC

ISCe Leadership Luncheon

(Sponsored by G2 Satellite Solutions) 12:30 pm – 2:00 pm Monte Carlo / St. Tropez Room

March 2006

Tuesday, June 14, 2006 VIP Breakfast (by Invitation Only) (Sponsored by Lockheed Martin Corp.) 7:30 am - 8:30 am % Exhibitor Pavilion **CIO/CTO Plenary Session Tracking Technology Frontiers: The Technology Leader's Perspective** 9:00 am - 10:30 am Monte Carlo / St. Tropez Room One of the most crucial decisions a company can make is when, where and to what extent it should upgrade,

(Sponsored by The Boeing Company) 7:30 pm - 10:00 pm Sea World

3:30 pm-4:00 pm Exhibitor Pavilion

(Sponsored by Alcatel Alenia Space)

6:30 pm - 7:30 pm Sea World

Welcome: Stephen O'Neill, President -Boeing Satellite Systems International, Inc.

FEATURED E

Refreshment Break

ISCe Awards Dinner

ISCe Reception

(Sponsorship Available)

Keynote Speaker: TBD

ISCe 2006 Awards Presentations

adopt, cannibalize and innovate its suite of technology products. A wrong decision can impact a company's revenue negatively for years and significantly damage its ability to compete in a global economy that is reinventing itself technologically every 12 months! What are the keys to avoiding technology pitfalls? How do successful technology leaders decide where and when to invest? This mustattend panel will impart the "best practices" used by successful media, telecom and satellite companies worldwide. Moderators:

Panelists:

David Bross, Chairman – ISCe 2006 **DK Sachdev**, President – SpaceTel *Consultancy* Daniel Coombes, Sr. Vice President & CTO, Wireless Broadband Networks – Motorola **Paul Heimbach**. Sr. Vice President & CTO –

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- Carmel Group's Cable, Satellite & Telco Entertainment Forum Military & Government Requirements Forum
- Digital Content & Mobile Forum
- Global Business & Financial Outlook Forum
- GVF Wireless Forum

- Retail Enterprise & Business Forum
- Space & Security Forum:
- WTA Translating the Trends Workshop

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a GeBIT Event



Stell Patsiokas, Executive Vice PresidentTechnology, XM Radio Inc. Marc Pircher, CTO – Alcatel Alenia Space Richard Skinner, Vice President, Transformational Communications – Lockheed Martin Corp.

Exhibitor Pavilion Open

(*iDirect Technologies*) 10:30 am – 2:00 pm Exhibitor Pavilion

Coffee Break

(Sponsored by Xtar Inc.) 10:30 am – 11:00 am Exhibitor Pavilion

Retail & Business Enterprise Forum

(Sponsorship Available) 11:00 am – 4:30 pm Riviera Room

Session TH1: Moving from a Hub-and-Spoke Enterprise to Any-to-Any Connectivity

11:00 am - 12:30 pm % Riviera Room

Many retailers have the traditional hub-and-spoke connectivity between their headquarters and individual stores. However, many end users of satellite-based technology as well as those that use terrestrial pipelines are considering "any-toany options," including Multiprotocol Label Switching (MPLS), a networking technology where 'labels' are assigned to data packets traveling through the nodes of a network. This label switching method is different from traditional internet technologies, and has proven to be a more efficient and speedy way of sending data across networks. How is the use of MPLS affecting transponder usage? Will "any-to-any options" revolutionize the way in which companies use their VSAT networking capabilities? Our panel of experts, including many users of end-to-end satellite solutions will share their insights and prognostications during this highly interactive panel session.

Jose del Rosario, Senior Analyst & Regional
Director, Asia-Pacific – NSR
Behzad Nadji, Vice President, Network &
Systems Architecture and Chief Architect –
AT&T
Orlando Skelton, Vice President, Enterprise
Solutions – SES Americom

Session TH3: Optimizing Retailer's Connectivity and Increasing Efficiencies 1:30 pm – 3:00 pm Riviera Room Managing your company's telecom expenses has never been more important. In this time of seemingly endless hybrid telecom options and solutions, companies are finding ways to use technology more efficiently, thereby driving down costs and improving productivity. What hybrid solutions have worked for retailers? Which ones have proven to be more promise than punch? This panel of providers and end users will sort through the myriad options facing company chief technology officers and offer <u>solutions</u> for your company's future telecom/networking choices.

 Moderator:
 Connie Gentry, Senior Editor – Chain Store Age Publication

 Panelists:
 Ron Resnick, President & Chairman – WiMAX Forum; Director of Marketing, Broadband Wireless Division – Intel

 TBD, Vice President – CommercialWare

Session TH5: Satellite Networks for Retailers: Improving the Value!

3:00 pm - 4:30 pm Riviera Room

Retail satellite networks historically have addressed the problem of providing credit card verification, inventory management and accounting to hundreds or thousands of stores and branches previously served by expensive and less-reliable leased telephone lines. A second and equally valuable application for satellite technology is the delivery platform for business television used in education and, in some cases, by in-store advertising. As these networks move from analog to digital format, the satellites themselves have become more powerful to reduce the cost of reception equipment. And innovations within the Internet and digital content distribution increase opportunities to enhance the customer experience, grow the business and provide cost reductions. This panel discussion will cover how leading-edge retailers are using satellites to perform legacy functions better and to provide new value. The session's interactive format will allow participants to share their innovative ideas and experiences, as well as the opportunity for attendees to comment and/or challenge our panelists.

Moderator:	Bruce Elbert, President – Application Tech-
	nology Strategy, Inc.
Panelists:	Christina Clifton, Executive Vice President of
	Sales & Marketing, Spacenet Inc.

Global Business, Policy & Financial Forum 11:00 am – 4:30 am Capri Room

Session TH2:International Roundtable: Emerging Servicesin the Global Space & Communications Marketplace11:00 am - 12:30 pmCapri Room



The International Roundtable will focus on the emerging space and communications services opportunities in Europe, Asia and the Americas. Speakers from each of these regions will outline growth markets and offer their views on how these markets likely will be addressed, the ability of domestic suppliers to match demand and the benefits of international partnerships. This session will examine the concept of creating agreements between and among international aerospace trade groups that will provide mutual and readily available assistance to any member company seeking to develop relationships in a foreign setting. Don't miss this outstanding international forum of foreign delegates.

Moderator:	Richard Swanson, Jr., Supervisory Trade
	Specialist of the U.S. Export Assistance Center,
	U.S. & Foreign Commercial Service – U.S.
	Department of Commerce's International Trade
	Administration
Speakers:	Andrew D'Uva, Vice President & Associate
	General Counsel – New Skies Satellites
	Dr. Eui Koh, President – Asia Pacific Satellite
	Communications Council (APSCC)
	Yutaka Nagai, Senior Executive Officer – JSAT
	Tom Navasero, Vice President – Intelsat Asia
	Pacific
	Mayank Patel, Managing Director – Tri Polus
	(Europe)

Session TH6: Assessing Business Models for Satellite Operators In a Consolidated Marketplace—Part I 1:30 pm – 3:00 pm Capri Room

The first part of a two-part session, Euroconsult will provide a comprehensive review of the key satellite business trends affecting your business. Euroconsult will provide a presentation of indicators of performance and development in the satellite sector. Following consolidation between leading satellite operators, the focus in the coming two years will likely be on mergers and acquisitions of regional operators, on potential investments in value added services and on the design of new business models to generate growth through new applications. Executives from leading international satellite companies will discuss strategic issues in the satellite marketplace and upcoming events.

Rachel Villain, Director of Space & Communi
cations - Euroconsult
Jean-Paul Hoffman, Vice President Corporate
Communications – SES Global
Alejandro Macarron Larumbe, Head of Sales
& Services - Hispasat
Ronald Samuel, Chief - Eutelsat Inc.
Diego Sutachan, Vice President, Sales &
Marketing - Measat

Session TH8: From Innovation to Return on Investment: Dynamics of New Satellite Applications—Part II 3:00 pm – 4:30 pm Capri Room

In the final instalment of our two-part session, Euroconsult will focus fully on existing and emerging satellite applications for both fixed and mobile communications and entertainment in the international marketplace. The discussion will be centered around the impacts of the dynamics of applications such as HD, mobile and IPTV as well as mobile and fixed satellite broadband and DAB in the different world regions on international satellite market players' business models, and how companies expect to capture part of the growth generated by terrestrial and satellite innovations.

Moderator:	Rachel Villain, Director of Space & Communi
	cations - Euroconsult
Panelists:	Patrick Agnieray, Marketing Director -
	Alcatel Alenia Space
	Olivier Colaitis, Director, Marketing & Sales -
	Telespazio
	Olry Gérard, Head of Telecommunications
	Marketing & Sales - EADS Astrium
	Clayton Mowry, President – Arianespace Inc.

Box Luncheon (and Program) (Sponsorship Available)

Session TH4: ITAR Regulations And You-How To (Still) Prosper Under The Regime 12:30 pm - 1:30 pm Exhibitor Pavilion

The International Traffic in Arms Regulations and Global Competitiveness of the U.S. Space Industry ITAR jurisdiction over the majority of the U.S. space industry is here to stay for the foreseeable future. Many contend that such jurisdiction weakens the international competitiveness of the industry, or at least segments of the industry. But is this necessarily so? Much of the U.S. space industry, as with most U.S. industry, is subject to regulatory requirements to which many of its foreign competitors are not. Can the U.S. space industry manage ITAR compliance just as it manages compliance with other U.S. regulatory regimes, or does the ITAR impose a unique burden upon the industry in the global marketplace?

Moderator:	John Ordway, Partner – Berliner, Corcoran &
	Rowe, LLP
Panelists:	Leslie Taylor – Spectrum Reform Division,
	Office of Spectrum Management, NTIA

Alcatel Alenia Awarded Study Contract to Replace Globalstar Satellite Constellation

MILPITAS, Calif. — Globalstar has signed a study agreement with Alcatel Alenia Space for the design of the service provider's next generation satellite constellation. Under the agreement Alcatel Alenia Space will conduct a study to evaluate a new Globalstar low-earth orbit or LEO satellite system, designed to replace the company's current constellation.

Alcatel Alenia will perform an analysis of the company's future requirements and propose a conceptual design for a next generation LEO constellation. Alcatel Alenia has a strong appreciation of Globalstar's system requirements, having played a significant role in the design and production of the current Globalstar satellite system.

Pascale Sourisse, president and CEO of Alcatel Alenia Space, said Alcatel is also very pleased to be given the opportunity to participate in Globalstar's future Ancillary Terrestrial Component (ATC) service and to assist with an integrated satellite and terrestrial network.



A Zenit-3SL vehicle lifts off at 4:30 pm PDT (23:30 GMT) on April 12 from the Odyssey Launch Platform, at 154 degrees West Longitude in the equatorial Pacific, successfully launching JCSAT-9 satellite. (Sea Launch photo)

Sea Launch Successfully Delivers JCSAT-9 to Orbit

LONG BEACH, Calif. — Sea Launch Company successfully delivered on April 13 the JCSAT-9 communications satellite to geosynchronous transfer orbit (GTO).

Sea Launch said early data indicate the spacecraft is accurately positioned and in excellent condition.

A Zenit-3SL vehicle lifted off at 4:30pm PDT (23:30 GMT), from the Odyssey Launch Platform, at 154 degrees West Longitude in the equatorial Pacific. All systems performed nominally throughout flight. The Block DM upper stage inserted the 4401 kg (9703 lbs) JCSAT-9 satellite to GTO, on its way to a final orbital position of 132 degrees East Longitude. A ground station in Uralla, Australia, acquired the first signal from the satellite, according to a Sea Launch statement.

Built by Lockheed Martin Commercial Space Systems (LMCSS), the high-power hybrid A2100AX spacecraft carries C-band, Kuband and S-band transponders and is designed for a minimum mission life of 12 years on orbit. JCSAT-9 joins nine other JSAT spacecraft currently in orbit, covering North America, Hawaii, Asia and Oceania with communications and broadcasting services for corporate and inter-company networks as well as international telecommunications services.

Following acquisition of the spacecraft's signal, Rob Peckham, interim president and general manager of Sea Launch, congratulated JSAT and Lockheed Martin.

Arianespace to Launch Japanese Superbird-7 Satellite

EVRY, France — Mitsubishi Electric has chosen Arianespace to launch the Superbird-7 satellite for Japanese operator Space Communications Corporation (SCC).

Jean-Yves Le Gall, chief executive officer of Arianespace, announced on April 10 in Tokyo the signature of the launch contract for the Superbird-7 satellite.

Arianespace said the Superbird-7 contract is the 270th contract won by the company since its founding in March 1980, and the 23rd won in Japan out of 32 open contracts in the commercial market.

Superbird-7 will be launched by an Ariane 5 in the first quarter of 2008 from the Guiana Space Center, Europe's Spaceport in Kourou, French Guiana.

The satellite will be built by Mitsubishi Electric, Japan's first satellite maker to enter the commercial market, at its Kamakura Works, using a DS2000 platform, within the scope of a turnkey contract with Japanese operator Space Communications Corporation (SCC). Weighing about 5,000 kg at launch, it will be positioned at 144 degrees East.

The Supervbird-7 satellite will be fitted with 28 Ku-band transponders. From geostationary orbit, it will provide various communications services, including video and audio broadcast to home, CATV and mobile terminals, for the Asia-Pacific region with fixed and steerable spot beams.

Astra 1KR Satellite Successfully Launched on Atlas V



An Atlas V launcher successfully carried the Astra 1KR satellite into orbit on April 20 on the third mission of the year for International Launch Services. (ILS photo)

CAPE CANAVERALAIR FORCE

STATION, Fla. — An Atlas V launcher successfully carried the Astra 1KR satellite into orbit on April 20. The 19-story Atlas V-411 vehicle lifted off from Cape Canaveral's Launch Complex 41 at 4:27 p.m. EDT (20:47 GMT) and after a flight of 1 hour, 48 minutes, the launcher's Centaur upper stage released the satellite into a geosynchronous transfer orbit.

SES Astra, an SES Global, which owns the satellite, said the spacecraft will now be brought into its final orbital position within the next weeks and will be made commercially available end of June 2006 after extensive in-orbit testing.

Astra 1KR will be located at 19.2 (degree) East, Astra's prime orbital

position for delivering broadcast services to Continental Europe, and will also transmit HDTV channels. SES Astra says its satellite fleet reaches 107 million homes in Europe.

"We are very proud and satisfied that the Astra 1KR mission has been a success," said Ferdinand Kayser, president and CEO of SES Astra. "Astra 1KR will benefit our customers, strengthen our unique inter-satellite back-up scheme and provide replacement capacity for our Astra 1B and Astra 1C satellites."

Lockheed Martin (NYSE:LMT) built both the satellite, an A2100 model, and the Atlas V launcher. The launch was managed by the International Launch Services (ILS). SES was ILS' first Proton customer, with Astra 1F in April 1996, and this was its first launch using Atlas.

Ball Aerospace Wins Space Test Satellite Contract

BOULDER, Colo. — The United States Air Force Space and Missile Systems Center for the Space Test Program's Standard

Interface Vehicle (STP-SIV) has selected Ball Aerospace & Technologies Corp. as its prime contractor.

Ball Aerospace said the goal of the STP-SIV program is to increase the flexibility and reduce the cost of small satellites, complementing similar efforts underway with small launch vehicles.

As contractor, Ball Aerospace, with teammates AeroAstro, Inc., and Broad Reach Engineering, will build a small spacecraft with a non-proprietary standardized payload-to-experiment interface. The first space vehicle contract is valued at \$26M, with options for up to five additional spacecraft.

The Space Test Program, managed by the Space & Missile Center, Detachment 12, at Kirtland Air Force Base in New Mexico, has launched over 400 space technology experiments in the past 40 years.

Boeing Awards \$57-M Contract to ViaSat for Mobile Satellite Ground System

GERMANTOWN, Md. — Boeing has awarded ViaSat Inc. an initial contract valued at about \$57 million, with options for an additional \$15 million, to develop a ground-based beam forming (GBBF) system for a new mobile communication network covering North America. The beam forming system will operate with Boeing's new MSV satellites being built for Mobile Satellite Ventures (MSV).

The MSV network is designed to deliver advanced voice and data services via a seamless satellite/terrestrial hybrid architecture into devices that are virtually identical to today's cell phone handsets in terms of aesthetics, cost, function and mobility. ViaSat will supply Boeing with GBBF processors, Calibration Earth Stations, and the control and management subsystem for the three satellite networks.

ViaSat's ground-based beam forming system creates hundreds of small, flexible, adaptive "spot" beams on the earth that allow mobile handsets to communicate directly with the satellite with smaller antennas, higher speeds, and better performance than ever before. While the beams are projected to the earth by the satellites, the actual beam shaping signal processing is done in the ground system and allows MSV to optimize the use of frequency spectrum shared between the satellite and terrestrial cellular towers.

MSV holds a number of patents for integrating satellite and Ancillary Terrestrial Component (ATC) resources into a seamless mobile network combining the ubiquity of satellite with the convenience and indoor coverage of conventional cellular networks.

Boeing Selects Alcatel Alenia to Provide Tanks for its Delta II Vehicle

PARIS — Boeing Company has awarded Alcatel Alenia Space an \$11 million contract for the manufacture of 12 additional Second Stage Tank Assemblies for the Delta II rocket. The delivery of the new tanks, which will be manufactured in the Alcatel Alenia Space facilities in Turin, Italy, will occur between 2007 and 2009.

"This is the second contract awarded by Boeing to our company for the manufacturing of these important components, following the contract received in 2001 for the construction of twenty-one similar modules" said Luigi Maria Quaglino, senior vice president and general manager of the space infrastructures & transportation activities of Alcatel Alenia Space. "It underlines Alcatel Alenia Space's distinctive expertise and capabilities in developing and manufacturing a wide range of products for complex space applications."

Alcatel Alenia is active in the United States in the sector of space infrastructure and transportation systems. It is one of the major contributors involved in the construction of the International Space Station, for which it has developed numerous logistical modules as prime contractors (MPLM, Node 2, Node 3, Cupola), and is involved as major subcontractor for the European Columbus Laboratory Module and the ATV Cargo Carrier.

The company also collaborates with Boeing in the launch preparation of the modules (at Shuttle to the International Space Station.

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Eutelsat's Hot Bird 7A Satellite Goes Live



Hot Bird 7A is based on Alcatel Space's Spacebus-3000B3 platform and was launched on March 11 by an Ariane 5 ECA. (Alcatel Space photo)

PARIS — Eutelsat Communications (Euronext Paris: ETL) has announced the commercial entry into service of its Hot Bird 7A broadcast satellite. Eutelsat said the satellite went into operation in the night of 20 April at 01.00 UTC (03.00 Paris time).

Built by Alcatel Alenia Space and launched on 11 March by an Ariane 5 ECA rocket supplied by Arianespace, the satellite's performance in orbit is expected to exceed 15 years.

Equipped with a payload of 38 Ku-band transponders, Hot Bird 7A is the first of a new generation of Hot Bird satellite to be located at Eutelsat's 13 degrees East neighborhood, which broadcasts 850 television channels and 550 radio stations to more than 113 million homes. The satellite's principal mission is to replace Hot Bird 1, which has provided 11 years of stellar service at 13 degrees East.

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Boeing Announces Space Exploration Leadership Changes





John Elbon

 programs and effectively focus on
 NASA's Constella-

ST.LOUIS -

Boeing Space

formerly NASA

announced several

Systems, has

key leadership

facilitate the

reassignments to

transition of legacy

Exploration,

tion program initiatives for returning humans to the moon and beyond.

"The leadership changes will enable Boeing to successfully execute current programs and position us to better support NASA in implementing the Vision for Space Exploration," said Brewster Shaw, Boeing Space Exploration vice president and general manager.

John Elbon was named vice president and program manager, Constellation, formerly known as Space Exploration Systems. Elbon succeeds Chuck Allen, now the vice president of Boeing business operations in Huntsville, Ala. Elbon most recently served as International Space Station (ISS) vice president and program manager. Elbon will lead Boeing efforts on the Crew Exploration Vehicle (CEV), Crew Launch Vehicle (CLV) and other NASA Constellation program elements.

Joy Bryant replaces Elbon as ISS vice president and program manager. Bryant previously served as Space Exploration chief engineer and was responsible for managing the engineering support to Boeing's ISS, Space Shuttle and Constellation programs. Bryant will lead Boeing in engineering, development, integration and operation of NASA's ISS program.

Joe Gernand replaces Bryant as director of engineering and program chief engineer. He previously served deputy program manager and chief engineer. In his new assignment, Gernand is responsible for managing and integrating engineering support for all Boeing Space Exploration programs. Cheryl Britt, formerly Boeing Huntsville, Ala., operations site chief engineer, is named to the newly created position of program manager, Transformation and Integration (T&I), Space Exploration.





In Huntsville, Britt was responsible for people, processes and tools. As program manager for T&I, she is responsible for ensuring the necessary skills, expertise, tools and processes are properly transitioned from

Joe Gernand

Cheryl Britt

Space Exploration legacy programs - Shuttle, ISS, Check-out, Assembly and Payload Processing Services (CAPPS) - to NASA Constellation projects such as CEV and CLV.

In another newly created position, Jim Chilton was named acting head of Space Exploration's Launch Systems . Located in Huntsville, Ala., Chilton will lead Boeing in support of Marshall Space Flight Center's CLV, Cargo Launch Vehicle and the Earth Departure Stage projects. Previously Chilton led the CAPPS contract at The Kennedy Space Center, Fla., Mark Jager was named acting CAPPS program manager, replacing Chilton.

The nation's Vision for Space Exploration is a strategy of human and robotic space missions designed to return humans to the moon sometime between 2015-2020 and eventually to Mars and beyond. Boeing Space Exploration, headquartered in Houston, is the leading global supplier of reusable and human space systems and services. Space Exploration, a division within Boeing Integrated Defense Systems' Network and Space Systems business, employs nearly 4,200 people in Texas, Florida, California and Alabama.

Dan Goldberg Joins Exec. Committee of SES Global



Dan Goldberg

BETZDORF, Luxembourg—SES Global S.A. has appointed Daniel S. Goldberg to the Executive Committee of SES, reporting to Romain Bausch, president and CEO of SES Global.

In addition to his new functions as a member of the Executive Committee, Goldberg will continue to lead New Skies Satellites in the position of president and CEO. His appointment

follows the successful completion of the acquisition of New Skies by SES Global.

Goldberg has been with New Skies since its creation in October 1998 as a spin-off of Intelsat, the former intergovernmental organization. Goldberg initially served as general counsel and later as chief operating officer before assuming the role of CEO in January 2002.

Goldberg joined New Skies from PanAmSat Corp., where he was vice president of Government and Regulatory Affairs and associate general counsel. Prior to PanAmSat, Goldberg was an associate with the telecommunications law firm Goldberg, Godles, Wiener & Wright, as well as with Covington and Burling.

While in private law practice, he represented a range of companies, including satellite operators, wireless service providers, broadcasters and computer manufacturers, on commercial and regulatory matters. Goldberg earned an undergraduate degree from the University of Virginia, graduating with highest honours, and a law degree from Harvard Law School where he graduated cum laude.

Sea Launch Transitions to New Leadership

LONG BEACH, Calif. — To assure continuity of leadership and a smooth transition, Robert Peckham has been named interim president and general manager of the Sea Launch Company, LLC, effective March 30, 2006.

Peckham takes the helm of the sea-based commercial launch service provider, following the departure of Jim Maser, who has led the company since 2001. Space Exploration Technologies (SpaceX) announced on March 17 that Maser would join that company as president and chief operating officer.

Peckham has served as vice president of sales and marketing for Sea Launch, since 2001. He has more than 25 years of experience in the aerospace industry, transitioning to the commercial launch business in 1988 on the Delta II program at McDonnell Douglas Astronautics Company (now Boeing) in Huntington Beach, Calif.

Since 1988, Peckham has held increasingly responsible positions in the development of commercial space programs. He was manager of Launch Services Acquisition for Hughes Space and Communications (now Boeing Satellite Systems, Inc.) before joining the Sea Launch team in 2000, as senior director of sales and marketing.

Antonovich Announces Next Move Post- Intelsat-PanAmSat Merger



LAS VEGAS — Michael "Mike" Antonovich, executive vice-president, Global Sales and Marketing of PanAmSat, announced on April 26 at the National Association of Broadcasters (NAB) convention in Las Vegas that he will be joining Los Angeles-based SpaceConnection, a provider of programming-related satellite transmission services to all the major U.S. television networks and cable programmers. SpaceConnection was recently acquired by satellite operator Telesat

Antonovich

Canada.

Antonovich will be President succeeding founder and industry pioneer Robert M. Patterson at SpaceConnection effective 30 days after the Intelsat-PanAmSat merger is approved by US regulatory authorities.

Antonovich is a 27 year veteran of the industry and has been with PanAmSat for 17 years starting out as Manager of Broadcast Services and working his way up to executive vicepresident. Prior to PanAmSat he worked with Group W Network Services in Stamford, Connecticut and before that worked two years with sports network ESPN.

Antonovich will be based in Norwalk, Connecticut and will be responsible for developing new businesses and growing SpaceConnection, the company that Bob Patterson founded over 20 years ago.

Antonovich is a recognized mover and shaker in the industry and told Satnews Editor Virgil Labrador he is very excited about this new opportunity. Meanwhile he will serve his term at PanAmSat until the merger deal with Intelsat meets regulatory approval.

The NAB is one of the largest broadcasting shows in the world attended by over 100,000 delegates.

Wolfgang Keuntje Joins SES Astra

BETZDORF, Luxembourg — SES Astra has appointed Wolfgang Keuntje to be managing director of the new SES Astra subsidiary tasked with establishing a digital infrastructure in Germany.

The company led by Wolfgang Keuntje will offer broadcasters expanded services for digital satellite TV, and establish and manage the necessary logistics, marketing and service activities. SES Astra said the company will create around 100 jobs in Unterfohring near Munich. The new company's service package is designed to enable broadcasters to roll out new digital programs and offerings.

Wolfgang Keuntje became known for the establishment and stock exchange listing of T-Online in Germany. Since late 2000, he has acted as a consultant for various Internet, IT and media enterprises.

GeoEye Names Paolo Colombi Vice President of International Sales

DULLES, Va.— Remote-sensing imaging company GeoEye has appointed Paolo E. Colombi as vice president of International Sales effective immediately.

Colombi has over 25 years of experience in sales, operations and international management in high-technology and telecommunications systems and services. He will be directly responsible for all international business development and sales, and serve as a resource to more than a dozen Regional Affiliates and Regional Distributors around the globe.

Prior to joining GeoEye, Colombi was senior vice president of International Sales for Telular Corporation. Before that he was executive vice president of Sales for Lotus Interworks LLP and also served in various executive-level positions for Teleglobe International Corp.

Previous to that Colombi had 12 years' consecutive tenure for Sprint International and both for its predecessor company (GTE Telenet), and for its successor company (Global One). During this tenure he held the positions of president of Global One in Mexico; managing director of Sprint International France and vice president, System Marketing and Sales for Sprint International Southern Europe in Italy, among other executive positions. Colombi has lived in Italy, France, and Mexico and is fluent in four languages.

He holds a Doctoral Degree in Electrical Engineering from the Polytechnic Institute of Turin (Italy), a Master of International Management degree from the American Graduate School of International Management (Thunderbird), and a Master of Business Administration degree from Southern Methodist University. Colombi was a Fulbright Scholar at both graduate schools in the USA. WING Store & Broadcast

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for broadcasters that simplifies regional customization, program substitution, ad insertion and rights management.



Vocality International Opens New Broadcast Division Headed by Bill Page



Vocality International has announced the opening a new Broadcast business division to operate from its facility in Herndon, VA.

Vocality said the division will be headed up by Bill Page, who has been appointed as vice president, Broadcast Sales. Page joins Vocality from a distinguished career at Brightstar

Communications, Voyager and Reuters Television.

Vocality is a UK-based manufacturer of multiplexers, routers and

satellite simulators. It also provides Satellite News Gathering services and communications solutions to many of key US and European TV stations. The opening of the new division alongside the government division in the United States signifies "a firm commitment to developing the market and product capability in the field of voice and IP data delivery into news and sports trucks and flyaway systems," according to Vocality.

Page has over 25 plus years experience in the satellite and related industry environment. His career began at Hughes Television Network and coincided with the development of satellite technology as an alternate method of distributing video and audio and during a time that transportable earth stations were introduced to the industry.

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By-the-Byte New Global Satellite Services on Demand

Vienna, VA - On-Band has launched it's, **By-the-Byte**SM, bandwidth on-demand by satellite service. By-the-Byte is designed to serve customers who require backup for missioncritical services at fixed locations or instant access to operations which are frequently moved in response to unplanned events like disasters and news. On-Band believes that the fact that this service is available in North America, Europe and the Middle East, with other regions planed, is appropriate to certain types of customers such as military, broadcasters and global enterprises for establishing initial communications from remote locations. In addition, other customers such as insurance companies, financial institutions and large corporations use the service for temporary communications or disaster recovery and continuity of business from fixed locations and temporary sites in one region.

One of the key aspects of the By-the-Byte service is the user's ability to roam between satellites and regions of the world without a requirement to schedule or book capacity, paying only the monthly fee and for any additional bandwidth used. This is achieved through investments On-Band has made in customizing its proprietary usage and billing system software. This software enables On-Band and it's Resellers to automatically identify and authorize remote terminals registered for the service, letting users log on or off at will. If a terminal is registered as a transportable unit, (including auto-deploy systems), the user is also free to roam anywhere in the coverage areas of the multiple By-the-ByteSM footprints as authorized by the satellite operators. Additional info is available at <u>www.on-band.com</u> and from Resellers such as Telematics Business Consultants at <u>info@tbc-telematics.com</u>.

ESA, Wired Ocean Launch Low-cost Internet Access at Sea

PARIS ? Through a project supported by the European Space Agency (ESA), the UK-based company Wired Ocean Ltd can now provide enhanced Internet access for ships at sea at a much lower cost than was previously possible.

Although satellite links at sea are quite common, the speed of data transmission for most users is very low, from 600 bps to 64 kbps, with around 10 kbps being a typical speed. This, combined with usage costs of around • 20 per megabyte, has created an environment in which many ship owners cannot reliably access the Internet, or use it regularly.

The Wired Ocean approach uses a hybrid solution, combining Ku-band satellites for the downlink and narrow L-band satellites for the return channel. While at sea, the downlink (forward) channel offers a speed of 512 kbps and the uplink (return) channel speed is 9.6 kbps for Globalstar and up to 64 kbps for Inmarsat. This configuration promises to be more economical than purely narrowband satellite systems, with cost savings of as much as 70 percent over current systems, according to ESA.

The ship's Internet communications are managed through a specialized client server developed by Wired Ocean. This server interfaces with a tracking TV Receive Only (TVRO) antenna for the downlink and various types of narrowband communications equipment for the uplink. The ship's TVRO is used to receive Internet data while simultaneously providing signals to the ship's televisions.

By using Eutelsat's Eurobird located at 28.5° East and Hotbird at 13° East, Wired Ocean is able to provide its service for the two most watched European TV locations. As many ships already have TVRO and a satellite phone, addition of the Wired Ocean server now gives them the triple play (telephone, television and internet) for an incremental capital outlay.

From July to December 2005, ten trials were carried out on various vessels, including five yachts in the Mediterranean Sea, three fishing vessels in UK waters and the North Sea, a container ship operating between Iceland and continental Europe and an oil & gas supply vessel in the North Sea. The trials proved Wired Ocean to be exceptionally reliable, with the satellite/hub operating at 99.954% availability and as much as 15.2 gigabytes of data was down-linked. The results of these trials not only demonstrated the pent-up demand for internet access at sea, but also that a reasonably priced service improves operational efficiency as well as the quality of life for crew and passengers aboard ships.

New Intelsat Broadcast Video Service Will Accelerate Deployment of IPTV

WASHINGTON — Intelsat has introduced Ampiage(SM), a new satellite-based, open-architecture, content delivery and management service for North American multiple system operators (MSOs) seeking to cost-effectively upgrade to MPEG-4 and telecommunications operators (telcos) looking to enter the IPTV market.

"Our goal is to offer services that help our customers reach their goals, and Ampiage will benefit phone companies and cable operators in two very different ways," said David McGlade, CEO of Intelsat. "This is a game-starter for phone companies looking to launch IPTV services for their subscribers and make a video play. It is also a cost-effective way for cable companies to upgrade to MPEG-4 without having to invest new capital in equipment."

Modeled on a "super head-end" for content distribution Ampiage will upgrade and convert video stream for MSOs from MPEG-2 to MPEG-4 using state-of-the-art equipment. The move to MPEG-4 is being driven by the desire for both higher transmission quality and efficient utilization of bandwidth. The service is designed to include fully redundant facilities and transmission capacity, thus it is expected that Ampiage services will have the 'gold standard' service excellence and high availability for which Intelsat is known. Intelsat said telco customers are expected to realize significant cost savings by taking advantage of Intelsat's packaged offering, which, if the elements were procured separately and on their own, would cost them millions of dollars. Telco customers are expected to benefit from Intelsat's volume relationships with content creators worldwide, its ability to secure transport rights and its relationships with coveted niche and international programmers, which will enable them to create local packages that are highly customized to demographic concentrations.

Ampiage cost-effectively packages the acquisition, aggregation, encoding, encapsulation and encryption of licensed TV programming from content providers and has the ability to redistribute it in MPEG-2 or MPEG-4 format to cable and telecom service providers. This allows MSOs and telcos either to establish or enhance their digital programming lineups quickly and with low capital investment.



Ampiage completely centralizes the aggregation of national TV programmer content and offers hundreds of video and audio channels in full digital quality. This enables telcos to efficiently bundle an attractive standard and high definition programming package with their voice and broadband services without incurring a significant upgrade cost.

Ampiage originates from Intelsat's Video Operations Center, where video and audio are received and processed for distribution to telco and MSO video hubs nationwide. Leveraging the complete coverage of North America offered by the Intelsat Americas fleet, Ampiage distributes the programming to regional telecom and cable service providers. Telcos and MSOs then distribute this programming content via xDSL, fiber, conventional cable networks and other broadband networks to their residential subscribers across North America.

Hughes Unveils Innovative High Availability Network Solution

GERMANTOWN, Md. — Hughes Network Systems, LLC launched on Monday HughesNet High Availability Networks, the first new offering under the company's recently announced HughesNet Managed Network Services.

Designed to meet the increasing demand of many enterprises for higher levels of availability, HughesNet High Availability Networks is being billed as an affordable service that provides a highly reliable, enterprise-wide broadband network that frees IT executives to focus on the provision of applications to support internal core business processes.

The new offering delivers both terrestrial and satellite connectivity at each network location at prices below a typical frame relay network. This unique, completely integrated approach to high availability networks is fully managed by Hughes and yields an availability of better than four 9's, backed by service level agreements (SLAs).

Unlike traditional high availability offerings that provide a single primary network with a secondary network overlay only used for back-up, HughesNet High Availability Networks deliver co-primary connectivity with two completely diverse paths-one terrestrial and one satellite-at each network location. During a service disruption on either path, application traffic is automatically re-routed to ensure customers and employees are not affected.

"HughesNet High Availability Networks reduces the cost of a

reliable, enterprise-wide broadband network. It is designed to help customers achieve maximum up-time at an affordable price, while at the same time providing high aggregate capacity allowing growth for the future applications necessary for the development of the business," said Mike Cook senior vice president of Hughes. "This new offering allows our customers to focus on the development of their business while we look after their network."

Hughes has more than 30 years experience providing enterprise network management services. The HughesNet Managed Network Services suite is comprised of High Availability Networks, Optimized Networks, and Access Continuity Services.

Emergency Medical Info at the Touch of a Button

DARIEN, Conn. After the London train bombings last summer, a British paramedic came up with the idea to store emergency contact details in people's mobile phones. Since then, the idea has quickly spread around the world and many people are loading emergency contact information on their mobile phones under the acronym ICE – In Case of Emergency. Now emergency workers and public officials in the United States, from Connecticut Gov. Jodi Rell to Rep. Adam Smith (D-WA), have established policies and introduced resolutions and legislation expressing the importance of using the mobile phone as part of personal emergency preparedness.

ICE First, a new, inexpensive software application for mobile phones, allows users to store medical, insurance and emergency data about themselves and dependents on their mobile phones and use it in an easy and reliable way. ICE First has taken a simple idea – In Case of Emergency contact information – and developed a more robust version for today's technology rich mobile devices.

"We've taken a potentially life-saving idea, applied our proprietary technology, and developed a mobile phone- and Webbased software application called ICE First that harnesses and capitalizes on mobile technology to store and automatically update emergency contact and medical information," said Keith Buckley, president and CEO of Juke Systems Inc., the company that created ICE First. "ICE First puts medical and emergency preparedness in the palm of your hand."

ICE First provides a central storage area for medical information and emergency contacts that the mobile phone user can have

with them at all times. The application provides an over-the-air updating system that synchronizes the handset application with a Web database allowing subscribers to securely upload information from their computers to their mobile devices. By using ICE First, emergency contact, medical and insurance information, as well as a list of prescriptions, allergies and preferred care givers will be readily available at the touch of a button on most mobile phones.

ICE First provides a password-protected Web site that can be accessed from any computer connected to the Internet allowing users to easily update information from a full keyboard vs. inputting the data on their mobile device.

"The most important benefit to the subscriber is when first responders have all the patient's emergency medical information easily available on a mobile phone," said Buckley. According to the Centers for Disease Control and Prevention, close to 900,000 emergency victims in the U.S. were unable to provide even simple contact information to emergency room personnel in 2003. "That's a scary number," explained Buckley. "If ICE First can lessen that number significantly, it has accomplished one of its primary goals - making people safer and able to feel more secure by knowing that medical personnel have the information they need to do their jobs more effectively."

ICE First which has patents pending is available now and can only be purchased through the www.icefirst.com web site. The subscription service costs \$9.95 for the downloadable software and first year's use of the Web interface.

After the first year, subscribers will be notified about an annual renewal fee of \$4.95 which allows continued access to the Web site for data entry and software upgrades. **SM**



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Hybrid Networks: Glory Days Ahead?

The challenge and opportunity of managing the next integrated networks

by Howard Greenfield

***The** glory days of networks are over" I overheard someone say on a flight home from Asia last year from someone who concluded: "it's all just a commodity now." The remark made me consider if that's really true for the satellite industry or whether it was just nostalgia for the tremendous growth and innovation of the past. When I worked at Sun Microsystems the trademark tagline "the network is the computer" went out of fashion for a while, but the company and the Internet phenomenon have re-asserted this fundamental truth.

Communications infrastructure becomes more important-and often more complex-everyday. Due to increasingly rich enterprise data and ondemand home content mean seamlessly integrating fiber, wireless, home networks has become mission-critical. Thus managed hybrid networks for enterprise, government, broadcasting that deploy a mix of terrestrial and satellite delivery seem to gaining attention. SES Americom recently signed NDS to handle IPTV conditional access. Just one headline indicator among many each month of the with growing combined requirement for highbandwidth multimedia, interactivity, and security.

For example, as video, graphics, and sound are elbowing their way onto corporate networks, the keepers of the castle are watching closely. The "widespread use of media" is growing in every corporate enterprise as employees seek complex information "from more devices, and text becomes less and less useful for rapid comprehension and navigation" Cap Gemini Global CTO, Andy Mulholland explained to me at their Cupertino Silicon Valley headquarters. (Paris-headquartered systemintegration giant CapGemini has 60,000 employees and 8.5B\$/revenues). And picture the company's growing requirement for interfacing a console of computers that circle the globe completely secure and constantly available:

Mulholland's solution is a working example of integrating corporate resources, making them accessible right on the PC desktop wherever he plugs into the regional network node. The challenge of managing hybrid networks is an evolving challenge. "In the last 25 years since 1980 this topic has come up again and again" says Mulholland. "At the time of the Internet revolution the general belief was you would never get more than 10 Mbs down copper cableyou'd have to use fiber. Today 100 Mbs over copper is the norm. You've got Gigabit Ethernet running around in the background...and with wireless we don't even have the limitation of wires to worry about. So, the difficulty is how



DESKTOP GRAPHIC – Andy Mulholland PC Desktop Network Application Interface

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often do I have to replace the antiviruses and what degree of management do I want to put on those. Because it appears that in the sense of connectivity spectrums we have enough answers."

The critical task for network management is end-to-end control allowing the ability to "develop, produce and move content across a variety of transmission mediums to reach end users" according to GlobeCast SVP of Strategic Development and Marketing Jonathan Feldman. "It puts the power of when, where, and how in the hands of the customer."

The transport benefit to the programmer or content owner is creating a work flow that enables rapid, secure delivery. It's a scenario says Feldman that enables "individualized play lists from the stored content to create a linear program channel – potentially tailored by region ('when') for playout and distribution by satellite or fiber ('how')." This type of customer control seems to be what the future is all about—creating the virtual look and feel of the linear channel along with the economic benefit of leveraging libraries of stored content from any location.

"Satellite services play several key roles in a hybrid network model that no other technology can match" says Spacenet President & CEO Bill Gerety. Spacenet (M\$209.4 2005 revenues) is the North American subsidiary of Gilat Satellite Networks Ltd., the number 2 manufacturer of VSAT systems after Hughes Electronics. The company provides managed services for businesses and government agencies through its Connexstar service brand and consumer broadband services through its StarBand service brand.

Since satellite covers nearly all regions it can deliver broadband when

terrestrial is not an option. Likewise, for redundancy, Satellite offers the infrastructure of choice for many. According to Gerety they are the "perfect tool for backup and disaster recovery networks, since they can be used on a full- or parttime basis and they offer a wireless diverse physical path at the last mile." In a world subject to change and uncertainty, the value of instant infrastructure is incalculable whether in a coverage during a disaster like Hurricane Katrina or the need for instant mobile military communications.



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Finally, in addition to inherent multicast features, satellite is a compelling choice for content delivery networks; it can be tuned for bandwidth needs, models, and quality of service like no other medium. A hybrid network solution has the commercial pay off beyond pure data transport. Handling networking management and optimization takes a burden off the customer. So more than simply providing a simple network 'pipe', provider companies like Spacenet and others offer experience and service-a true managed network solution across various technologies, applications or regions supporting customer functional and revenue growth requirements.

"We are definitely seeing the requirement among our customers for hybrid offerings" according to Chris J. Leber, VP and General Manager of ViaSat Inc.'s VSAT Networks group. Viasat who were recently awarded a \$57 million contract to develop a next-generation of mobile satellite services (ground-based beam-forming system) saw 46.2% income growth in 2005 (\$345.9M).

Leber sees growing demand in North America where they offer managed network services, and believe it will propagate to the other parts of the world. "It may be happening in Europe too, but we don't have a service offering there, so we don't see it." He also points out that the migration to IP is a big factor. "IP-based systems are so pervasive and now our VSATs offer a feature-rich IP networking alternative just like terrestrial, so we feel we can compete with any technology".

Convergence will continue to be a force for the future and the division between DTH television and data service providers is proving an artificial one. "Look at the success of WildBlue for instance" he adds, "while Echostar A revealing excerpt from the author's conversation with David Sprechman, President & CEO of GlobeCast America. Sprechman's perspective as a former CFO and VP of Finance sheds an interesting light on the dynamics and future timing of hybrid networks.

Q. How is the industry and the competition changing?

A. I think the cable companies are slow to adapt to the technology, but they

always do eventually adapt. They're pretty entrenched in home entertainment; so where I see our future going in that sense is—there's a lot of challenges like profit margins and the whole changing of customer preferences – how as an industry we have to focus on convenience and ease of use in the world – it's what is demanded.

Q What about Content vs. Quality of Service?

A. For instance, as I have two teen-age boys and if you ask them about television not once will they comment about quality. Not important to these kids. Absolutely not important. Content's what's important. They're so used to looking at things on iPods, and Blackberries, and Instant messaging and immediate gratification that the quality of the picture is not the driving factor.

Q Regarding the future, what's ahead?

A. Our CTO has an IT background and I can see it in the industry – it's no longer your traditional broadcast engineer that's directing these companies. I had the pleasure of speaking with Dr. Alvin Toffler, author of *Future Shock*, and he said something that stood out for me, he said, 'predicting the future is easy, predicting when in the future is a challenge'— and I think that's what we're going through in this business at this point. We all know where things are headed, with all the IPTV, 'content management', 'value added' buzz words, we all know it's going to get there. *When* it's gonna' get there and how we can get there *cost-effectively* is the challenge for us all.

and DirecTV look at ways to provide broadband service. WildBlue could just as easily turn around and be an IPTV provider and do VoIP too. There are a lot of different examples of similar things like that happening."

There are some other big selling points of satellite ubiquity to keep in mind according to ViaSat Vice President, Worldwide Sales and Marketing Jorge Vespoli: "its ability to broadcast and multicast, and its rapid deployment. We expect to continue to see that as our strong suit. Because of those inherent qualities" says Vespoli "satellite will always retain a segment of the market that wireless can't serve."



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Conclusion

Finally, there are more than just technical network carriage issues to keep in mind in the analysis. How governments increasingly monitor the business of the information-the new global lingua franca of commerce-will play an increasing role. "To hitch seamless networks together we're talking about a the network types being a mixture of global, local, and everything in between" says Cap Gemini's Mulholland. "And then we're talking about content being assigned by the type of channel and you have a new paradigm in terms of the combinations of what is coming to you from where and it shifts outside the current definitions of

'what is coming to you from where' and how governments know how to handle legally, police, or tax through those kind of commercial channels."

Does that mean we'll see charge meters cropping up everywhere for each database update or video transmission? Not likely, but it's bound to affect operations, content management, and cost from the free flow we experience today. All this points to technical, business, and policy challenges. And the glory days? Well, some would argue the best is yet to come as an ever ubiquitous signal and quality of service is demanded to all locations around the planet



Howard Greenfield is an industry strategist and columnist who has held senior management and consulting positions with Sun Microsystems, Informix Software, BT (British Telecom), and Apple Computer. He is a frequent contributor to industry publications. Howard received his master's degree from Stanford University. <u>howard@go-associates.com</u>.



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FEATURE SES Global: Still hungry?

By Chris Forrester

The ink is barely dry on SES Global's acquisition document for New Skies Satellite (the deal closed in April 2006), but it looks as if the Luxembourg-based satellite giant is already deep in the planning for its next meal. Its problem is that when there are valuable crumbs still on the table there are still plenty of hungry players ready to fight for the scraps.

And some of those scraps are very tasty indeed. For example, during the last month there were widespread reports that SES Global is actively looking at India for its next round of expansion. Reports out of Mumbai (Bombay) suggest that SES Global is talking to Reliance Bluemagic, the renamed DTH operation of Anil Ambani's Reliance Skymagic. Rupert Murdoch's Indian operation (TataSky) had objected to the use by a rival of the 'sky' word. transmissions by mid-2006 with six transponders on an Insat-4 satellite, which it plans to ramp up over a period of time. "We are progressing with our plans and have a schedule in mind," says Arvind Narang, head of Reliance's DTH project. The Indian DTH market is pretty crowded with four existing players, plus Reliance's planned operation: Subhash Chandra's Dish TV, pubcaster Dordarshan's DD Direct, Sun Direct and Murdoch's T-Sky - already in the fray.

One Bombay story talked of "Romain Bosch" [*sic*] visiting over the next few weeks to scout for partners, and even says a joint-venture (j-v) alliance is on the cards. The truth is that that Robert Bednarek (EVP of corporate development at SES Global) is the SES staffer clocking up the air miles to India, and there's definitely something bubbling under with at least one of these broadcasting operations.



Romain Bausch, president/CEO of SES Global

SES Global already has coverage over India with its j-v AsiaSat fleet out of Hong Kong. Let us also not forget that New Skies Satellite, now fully absorbed into the growing SES empire, is also active over the sub-Continent with NSS-6 covering the region, and

Reliance says it wants to start

Atlas looks good

By Chris Forrester

Until the April 20 launch of Astra 1KR, Astra's name had never appeared on the 87-launch manifest of Atlas rockets from Lockheed Martin. If we widen the scope a little and include the whole SES family then the frequent flyer miles start totalling up, with 'Americom' appearing for the first time in 1996 and AsiaSat in 2003. SES Global's relationship with Lockheed Martin – and sister company International Launch Services – has matured strongly over the past few years.

Lockheed Martin's Atlas series of rockets has launched a trio of AMC satellites for SES Americom, and has

other SES craft on its manifest. But none looked so odd as the April 20 launch, which used a single solid rocket booster. The industry - and our own sense of symmetry normally expects to use such boosters in pairs, or quartets. It just looks right. ILS, a j-v between Lockheed Martin and Khrunichev of Russia, ignored symmetry and turned to pure engineering. The booster engine, and its vital 372,000 pounds of thrust, is designed with a 3 degree off-set to compensate for the implied imbalance. Helping is a thrust vector gimbaling system on the main rocket's massive RD-180 engine, which Atlas says can automatically cope with any number of asymmetrical booster engines. For example, on NASA's January launch of its 'New Horizons' mission to Pluto, the Atlas rocket used 5 of these solid rocket boosters and the rocket's main engine can be gimballed, if needed, by up to 8 degrees (con't. next page).

with a specific spot beam for India.

However, India is not the only country where a meal exists. Canada is also on SES Global's radar. Indeed, SES is already highly active with its Ciel project, which has a craft ordered March 17 for the 129 deg West location, and to be on location by late 2008. But besides embryonic Ciel, Canada has an established player in Telesat Canada (backed by Bell Canada Enterprises). And the word on the street is that Telesat might be looking for a junior partner. The problem is that SES Global, these days, doesn't much care for minority holdings. By and large its minority positions have not worked terribly well, and SES is understood to be dissatisfied with its Star One operation in South America, for example.

Of course, SES Global is not alone in seeking another meal. Eutelsat is very hungry indeed, and a partnership of some sort with Telesat would fit very well with the Paris-based operator, already well used to operating in multilanguage markets, and seemingly happy with its minority role within Hispasat. And that's the problem. Letting even a junior investment position go with a player like Telesat could easily open the door to someone like Eutelsat – and that doesn't go down well with SES Global – or vice versa! Which puts Telesat in an excellent position to achieve a good price in any potential negotiation.

SES Global's financial might is based firmly in Europe, and the cashcow that is SES Astra. On April 20th International Launch Services (ILS) launched Astra's latest satellite (1KR), its 13th member of the Astra fleet (and its 8th at 19.2 degrees East), not ignoring a pair of Sirius craft. It has three satellites on procurement (Astra 1L, Astra 1M and Sirius 4) now that 1KR is safely aloft. Astra has a pair of European broadcasting hot-spots. The first, at 19.2 deg East, looks primarily after Germany and France, while 28.2 deg East takes care of the UK and Ireland. It is fast developing a new orbital hot-spot at 23.5 deg E, currently looking after cable headends across Europe, into another strong DTH location. Sirius, from 5 deg East, beams its signals over Scandinavia and Central and Eastern Europe. All together Astra's European customer base exceeds 330 broadcasters and more than 1600 channels and services. Astra's client channels reach 107m homes.

Indeed, Astra added almost 1m new DTH television homes to its German coverage over the past year, and now reaches 16.2m homes. Interestingly, the number viewing Astra's digital signals also grew by 41% (1.8m) to a total of 6.3m homes. The study, carried out by TNS Infratest, reports a total of 37.3m analogue and digital TV households in Germany at the end of 2005. The total

	ILS Launch Milestones		
	Atlas	Proton	
2000	8	6*	
2001	4	2	
2002	5	5	
2003	5	1	
2004	6	4	
2005	3	4	
2006	2	1	Data: ILS

assorted launch challenges suffered by the industry have led to difficulties for the launch sector. Now, says Albrecht, [our] "launch service prices will meet our profitability hurdle immediately. We are pricing our launch services prices to receive economically viable rates of return."

In other words the cost of recognised success needs to be paid for. While ILS' Proton launch team awaits the results of Russia's investigation into the loss of ArabSat, Atlas could be in popular demand. **SM**

And the April 20 launch worked in textbook fashion. No holds for last-minute glitches, or weather, or clouds, lightning or winds. The launch window opened at (Florida time) 4.27pm, and at 4.27 up it went!! The event created a series of impressive records for ILS, not least the 100th launch for ILS, and the 79th perfect consecutive record for the Atlas family.

However, every launch has to make money and president/CEO Mark Albrecht, in a recent statement, says too many of its past operations were anything but profitable. Over-supply of launch capacity has affected prices while

Lockheed Martin's Atlas record

Atlas I	11 launched
Atlas II	10 launched
Altas IIA	23 launched
Atlas IIAS	30 launched
Atlas III	6 launched
Atlas V	8 launched



Mark Albrecht (president ILS) and Ferd Kayser (president/CEO SES Astra) relax after the launch of Astra 1KR)

number of satellite households rose by 5.9% to 16.4m, with satellite supplying some 44% of all TV households. Another 18.9m TV households received programmes via cable, while 2.1m homes used terrestrial antennas.

Taking into account all the reception modes, the number of total analogue homes was 27m, of which 10m received satellite programming – a decrease of 920,000. By contrast, the number of digital households rose to 10.4m. This increase was mainly driven by satellite: 61% (6.3m) of all digital households received their programming via satellite, 2.2m TV households (+9%) relied on digital cable, and a further 1.9m homes received terrestrial transmissions. In Germany, Astra is received via satellite and cable by 35m households in total.

But all is not well in Germany. Premiere is the name given to Germany's pay-TV broadcaster, and it has more than 3m subscribing homes, many of them tuned in for their exclusive coverage of the important Bundesliga soccer tournament. Then, unfortunately, Premiere lost its rights to televise the games, which ends this May. A new operator has won the TV rights to the

consequently had the infrastructure to handle any number of new channels, uplinking them to its own orbiting satellites and thus into directly into Premiere's settop boxes. Viewers were concerned, but most were relaxed given that they would save on their Premiere subscription, and switch funds to the new supplier.

Astra told the media back in February that it had invested in improving facilities at its renamed Astra Platform

matches: Arena Sports, a subsidiary of Unity Media, now has exclusive access.

This caused huge consternation in Germany – but more was to come. It quickly emerged that SES Astra was in advanced talks with Arena to carry its new sports-rich signals into German satellite homes. The logic was simple: Astra had bought from Premiere the sophisticated play-out and uplink complex that Premiere had formerly used, and Services operation (the old Premiere system) and meant that for the first time SES Astra would not just provide transponder space to individual television channels or platform operators, but act as a comprehensive service company offering the whole chain of facilities needed by broadcasters to get their channels into viewers' living rooms. All signals were to be encrypted in Nagravision, the technology developed by Switzerland's Kudelski Group, which was the same as that used pay-TV operator Premiere. This, in theory, meant that Premiere's existing subscribers would be able to receive the new services.



"We have chosen Nagravision because it offers technological excellence, highest security and significant potential to manage the rising complexity of digital broadcast solutions," said Ferd Kayser, Astra's president and CEO. "With Nagravision, we will be able to build an open and homogenous infrastructure with no technical barriers for all interested broadcasters, including German pay-TV channel Premiere".

If only it were that simple. Astra, for the first time in its history, hit a Public Relations brick wall. The outcry from German viewers was huge. Indeed, Astra's proposal was the first ever where an independent satellite operator had attempted to monetise access to its channels. According to Kayser, the aim was to attract an amount of television channels corresponding, in total, with at least a 50% audience market share in Germany's television market. In order to be able to access the platform, viewers would not only need a set-top-box capable of receiving signals encrypted in Nagravision and a smartcard, but also pay a monthly fee of between 3 and 5 euros to view the channels. SES Astra argued this fee is needed "to cover the technical cost of operating



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company to carry HDTV signals. With SES AMERICOM's high-definition AMC-10

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Astra 1KR on its way to work

the digital infrastructure". Additionally, they would be charged a one-time activation fee of around •10. According to Kayser, the company planned to invest more than •100m in the creation of the platform, which was due to launch at the end of this year.

The concept was truly breathtaking, with Astra – and one or two influential free-to-air channels – proposing to go 'pay'. It would scrub most free-to-air transmission and encrypt the channels – albeit in Nagravision, which more than 3m viewers already had by way of their Premiere boxes.

Astra, and the channels supporting the scheme, were trying to balance the vast advertising income from free-to-air transmission against lower fees for Hollywood and sports programming, as well as a percentage of Astra's monthly fee. RTL and Pro7/Sat1, arguably Germany's top three channels, were reportedly behind the plan. Public broadcasters ARD and ZDF immediately stated that they would not participate, arguing that the TV licence fee payers must be able to receive the public services without any technical barriers, such as encryption, or additional fees.

All this was bad enough, and painted Astra in an unfortunate light.

But worse, much worse, was to come. It emerged that Arena had selected not Nagravision encryption but Philips/Irdeto's Cryptoworks encryption. It's as if ITV and Channel 4 selected an entirely different scrambling system to that selected by Sky. In Germany it would mean, at least new set-top boxes. A large number of Premiere subscribers still use older 'd-box' receivers in their Mark 1 or 2 versions which only works with

Betacrypt, the encryption technology later abandoned by Premiere because of ongoing piracy problems. To enable the boxes to function despite the broadcaster's switch to Nagravision, a method described as "tunnelling" is employed. This means that the Nagravision-encrypted broadcast signal is sent in the structural framework of Betacrypt, so that boxes believe it is of genuine Betacrypt origin and consequently decrypt it. As Betacrypt and Irdeto are seen as "sister systems", Irdeto could "tunnel" the newly acquired Cryptoworks through a Betacrypt-alike framework and thereby make the signals accessible to practically all of Premiere's existing DTH subscribers. Instead of Premiere's smartcard, viewers would simply have to insert Arena's card into their receivers to gain access.

Either way, Astra has been sidelined. Viewers have been left confused and the start of the soccer season is just a month or so away. Arena says it now wants almost •15 a month to view its soccer games. And the very real prospect remains that viewers – German and others across Europe - will no longer have access to some of Germany's most popular free-to-air channels over satellite.

The jury is very much out on the impact this scheme has on SES Astra. Meanwhile, CTO Martin Halliwell says Astra still has plans to look at Ka-Band transmissions. "Customers do not yet have any need for Ka-Band," he says. "But that could change," he said.

Meanwhile, the SES Global acquisition bandwagon rolls on. It has developments taking place in Mexico, and Canada (via Ciel and potentially Telesat). SES would love to get its hands on some of Spain's Hispasat, but that is challenging given that Eutelsat seems well entrenched. Then there's Asia and the Far East where we can expect to see more use made of SES New Skies, as well as AsiaSat.

Astra 1A was launched at the end of 1988 and began transmissions on Feb 5 1989. Since that launch SES Astra – and SES Global – have gone from strength to strength, surprising the satellite world more than a few times along the way. It is now one of the world's two giant satellite operators, and my guess is that the surprises will continue. SM



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VIEWPOINT Hybrid Satellite/Wireless Networks: Fusion or Confusion?

by Bruce R. Elbert

President, Application Technology Strategy, Inc.

Definitions for the Hybrid Network

Fat words like *broadband*, *wireless* and *hybrid* bring many things to mind. Regarding the latter, we can look back about 30 years to a time when GEO satellites all operated at C-band and our first notion of a hybrid solution amounted to adding Ku band to the same platform. The hybrids of the 1990s recognized that satellites would need to coexist with fiber optic systems, and so the hybrid satellite-fiber network was promoted.

Our attention now is on a hybrid network that brings together satellite transmission and broadband wireless communications using land-based access points and networks. The point of this article's title, "Fusion or Confusion", is that there are many technologies and architectures for both halves of this kind of hybrid network. The permutations themselves would take up an encyclopedia volume just for definition purposes; yet, only a handful

ND SATCOM Hybrid Network Model (courtesy of ND Satcom)

- Terrestrial Backbone, Satellite Backbone Overlay
- Fixed, mobile sites (pre-deployed or dispatched)
- Vulnerability and Protection Mechanisms Scenarios

Single Satellite, Multiple Satellite



present real opportunity to those that pursue them, or threats to those who are stuck in their old ways.

It's easy enough to announce a new hybrid network initiative, based on a standard or technology partner. However, taking such an idea and converting it into a successful business or solution for others can prove to be both expensive and risky.

Satellite Networks using Fixed Antennas

Since its first publication three years ago, SatMagazine.com has dedicated many of its pages to modern satellite networks and their applications. From a broadband data perspective, it's clear that very small aperture terminals (VSATs) provide good service into remote areas and places where one cannot employ cables or fiber. If you want decent Internet access from one of these locations, your primary solution is a bi-directional link with a VSAT through a GEO satellite, hub and IP backbone in a developed country. While consumer Internet services are still a small factor in the US, they nevertheless are very valuable and affordable for access from the Caribbean Islands; villages in Mexico, Brazil and Uganda; and industrial sites used for mining, construction and oil and gas.

At the core, VSATs provide an effective means of accessing the Internet and for employing IP as the data communications protocol. IP has rationalized satellite communications in a way never possible before; the only comparable scheme is POTS – plain old telephone service. Such rural telephony networks grew by fits and starts over the past four decades; today, we see VoIP in the mainstream.

The satellite platform to support

VSAT networks was supposed to have taken a drastic shift to Ka-band and multi-beam satellites with on-board processing. So far, only Wildblue on Telesat F2 has gone into this type of service, allthough the day approaches when HNS begins broadband services using Spaceway. Still, GEO dominates as LEO systems are devoted to low bandwidth MSS, as discussed later in this article. The VSAT networks covered here currently use Ku-band and will at some point employ the new Ka-band satellites mentioned above. The spectrum and orbit positions are tightly controlled by each domestic regulatory body (FCC in the US, Industry Canada, MPT in Japan, MOPT in China and the various comparable bodies throughout Europe) and the ITU. As many readers are aware, it is possible for a legitimate company to



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obtain the necessary satellite license but this can take up to three years to accomplish from the start. Some organizations have short-circuited the process by "renting" existing but unused orbit positions. Alternatively, any user can acquire GEO transponder capacity from an existing operator who already possess the required satellites and licenses.

Wireless Networks

Unlike VSAT networks, which rely on a common foundation of a repeater in geostationary orbit, wireless networks have a variety of structures and footprints. Here's a quick rundown:

- Cordless phones –the first consumer wireless technology, and still very common.
- Digital cellular moving from narrowband GSM and CDMA to true 3rd Generation (3G) cellular capabilities that are available throughout populated areas.
- Bluetooth (802.15) for personal local area networks, connect ing devices at very short range at moderate data rates.
- WiFi (802.11) the preeminent wireless Local Area Network (LAN) technology that has taken over within the home and many office environments. WiFi is also used for "hot spots" as most laptop computers have built-in WiFi capability. However, it is not well suited for toll-quality service over an extended area such as a city.
- WiMAX (802.16) the complex set of standards that support carriergrade wireless broadband services. It could supplant WiFi hot spots and potentially compete with 3G cellular technology.

The spectrum for these systems breaks down into the licensed and the unlicensed. Licensed spectrum is just that the network operator has acquired government authority to operate in that particular frequency band using base stations that adhere to preagreed operating conditions. The licensee is protected in that they may employ that spectrum without having to suffer from harmful interference caused by other licensees who may be operating in the same or different regions. Digital cellular and potentially WiMAX employ licensed spectrum, which represents a valuable asset.

Unlicensed spectrum may be employed without a license; it applies to cordless phones, Bluetooth, WiFi and possibly WiMAX as well. The downside is that users of unlicensed spectrum cannot claim protection from harmful interference from anyone else (licensed or unlicensed), and must not cause harmful interference to licensed users. It is generally best to restrict unlicensed applications to very short range, measured in tens or hundreds of meters. Due to the limitations, unlicensed spectrum is generally not attractive for use in creating a commercial service. An exception might be the local hotspot that is provided using WiFi.

Mobile Satellite Service

Sprouting out of the roots of maritime mobile communications (commercial ships no longer rely on high-frequency Morse-code stations), MSS is



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Airtime Cost Comparison

	WaveCall 4003	77'	arsat B ²
Download speed	512 kbps	64 kbps	64 kbps
1 GB file download	256 min	2,080 min	2,080 min
Cost/MB	ч	¹ 16.53 ISON ¹ 36.00 M/05	\$18.60 (\$9.00/min)
Cost/GB	·1,000	\$16,640 ISON \$36,000 MPCS	^{\$} 18,720

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BGAN terminals (courtesy of Nera)

reaching a new level of acceptability. The "Big LEO" systems that crashed and burned in a financial sense have achieved some level of respectability even though their original promise of Global Mobile PCS was never fulfilled. Following the wave of large GEO satellite platforms, Inmarsat is pushing its Broadband Global Area Network (BGAN) system out across the planet to provide reasonably-high data rates to very compact user terminals (see figure). All of these systems are restricted to line-of-sight propagation and thus could be viewed as supplements to, but not substitutes for, the wireless networks cited above.

Like GEO Ku and Ka band systems, Big LEO and GEO MSS systems employ licensed spectrum. This ascribes an asset value to this aspect, much like digital cellular. The S and L band MSS allocations by the ITU are limited; this, coupled with the use of simple user terminal antennas and their attendant wide coverage of the sky, restricts the amount of usable bandwidth that a given satellite or system can use. There are also extensive rules for co-habitation of demand.

An important caveat is offered by specialist consultant in MSS, Tim Farrar of TMF Associates: "Mobile Satellite Services (MSS) are billed as providing "ubiquitous" wireless services, when terrestrial alternatives are unavailable. However, from a user's perspective, current MSS services are far from ubiquitous. While they may provide a dialtone on the most remote mountaintop, MSS services are not reliable inside buildings or cars. In the aftermath of last year's hurricanes, numerous complaints were registered by Iridium and Globalstar from satellitephone users who couldn't get service, but who were trying to use their phones indoors, as they would cell phones." While both GEO and Non-GEO MSS systems depend on a line-of-sight path, the GEOs benefit to some extent from the fact that the satellite does not move throughout the duration of a call.

different MSS

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means of delivering narrow-band

voice and medium-

terminals. There is

interest in mobile

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speed data to

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tions. Still, MSS is

Recent Developments – ATC and DARS

As described in my article in the January 2006 issue of SatMagazine,

there is currently a lot of interest in a hybrid fusion of terrestrial wireless and satellite MSS through an FCC mandate called Ancillary Terrestrial Component ATC). Mobile Satellite Ventures (MSV), a US MSS operator that is largely privately owned, is moving ahead with an ATC system at L-band. With spectrum originally licensed by the FCC for land mobile voice communications, MSV has the further authority to launch a pair of very high powered satellites that can deliver voice and data to a hand-held device. Requiring the largest platform currently in production at Boeing, the MSV satellites will be a technological challenge and provide power levels and capacities not previously implemented in a commercial L-band system. There are other limitations that result from prior coordination with Inmarsat and other Lband operators; also, the service is subject to the same constraints that Tim Farrar identifies in the previous paragraph. Under ATC, the FCC has authorized an integrated service for special user devices that employ ground base stations when in range (including in buildings, where possible) or the satellite when out of range of the base stations but in the open so as to permit clear line-of-sight operation. Other MSS companies that intend to do this include

There is an interesting contrast between traditional hybrid satellites that offer two different frequency bands (e.g., C and Ku bands) and hybrid satellite/terrestrial networks that employ the same frequency band (e.g., L band) but provide service through either the satellite or terrestrial facilities. We have an excellent example of the latter in the Digital Audio Radio Service (DARS) provided by XM Satellite Radio and Sirius Satellite Radio. ATC proponents argue that their vision leverages the hybrid fusion that DARS offers; the

Inmarsat and ICO.



business will produce large revenues and ultimately profits. MSS operators like Inmarsat make their money by selling satellite bandwidth minutes to service providers like Stratos and Telenor. They in turn provide connections from mobile users back to POTS and the Internet. This is a solid and growing business, serving the maritime industry, the military, oil and gas, and the news media. VSAT markets employ broadband

(Photo courtesy of HNS)

only difference is that ATC is a two-way service that competes with 3G cellular while DARS competes with conventional FM radio. While it is clear that DARS is superior in many respects to FM, the same may not be true for ATC. On the other hand, the success of ATC would be assured if its terrestrial service is better and cheaper than 3G cellular or equivalent. The satellite component, to be sure, is most valued when disaster hits or in remote locations, including in the air, but this is not enough by itself to justify the billions of dollars needed to bring ATC effectively to a competitive wireless market.

Business versus Technology

Fusion of satellite and wireless is both a redundant statement (because satellite is wireless) and an oxymoron. The possible contradiction results from the fact that a satellite link is inherently independent of the terrestrial infrastructure. On the other hand, modern wireless networks are merely extensions thereof. It's impossible to know whether the current efforts to fuse these into a connections to largely fixed locations, providing an alternative to landlines. The question remains as to the viability of ATC, which employs a common spectrum for cellular-type towers and the largest and most advanced GEO satellites. Like DBS and DARS, this is new territory for our industry and will involve a comparable heavy commitment over the start-up years. Yet, the fusion attempted by ATC can make a difference to many types of users and organizations.

Traditionally, satellite communications is a technology-driven industry, combining rocket science with telecommunications and the computer. The latter



pairing was the subject and title of a seminal text by IBM scientist James Martin. Dr. Martin delineated the technical intricacies and possibilities of transferring digital information over telephone and satellite systems to facilitate new applications in the nascent data processing field. What was a curiosity back in the 1970s when the book came out is now central to almost all human activity throughout the world. One can never know with certainty the ultimate impact on the market from the introduction of some particular network technology, and hybrid satellite/ terrestrial networks are no exception.

SM

Bruce Elbert has over 30 years of experience in satellite communications and is the President of Application Technology Strategy, Inc., which assists satellite operators, network providers and users in the public and private sectors. He is an author

and educator in these fields, having produced seven titles and conducted technical and business training around the world. During 25 years with Hughes Electronics, he directed major technical projects and led business activities in the U.S. and overseas. He is the author of The Satellite Communication Applications Handbook, second edition (Artech House, 2004).

Web site: <u>www.applicationstrategy.com</u> Email: <u>bruce@applicationstrategy.com</u>



A Tale of Two Companies: Interviews with Intelsat CEO David McGlade and Loral Skynet President Pat Brant

Tith Intelsat's purchase of PanAmSat, it will be the biggest satellite operator in the world again, after it lost its preeminent position to SES Global in 2001. Loral Skynet, however, just got back into the North American fixed satellite services market, after the expiration in March of a non-compete clause after it sold all its North American assets to Intelsat two years ago. Loral is now down to five satellites after divestiture is doing its best to reestablish itself in a very competitive global satellite operators market. At the recently-concluded National Association of Broadcasters convention (NAB) in Las Vegas, Intelsat CEO David McGlade and Loral Skynet President Pat Brand spoke separately with SatMagazine Managing Editor Virgil labrador to discuss the changes and the challenges they face in their respective companies. The interviews were very candid and provide an insight into different approaches taken by each company to the challenges they face. Excepts of the interview:

Intelsat CEO David McGlade

Q. This is your first year anniversary on the job, can you describe the year that you've had?

A. It was a very busy year. It was a better year for the industry than what I expected and I'm optimistic about the future of the industry and the future of telecommunications and media in general in terms of what's happening with all the convergence activity and services finally coming to market that has been in

development a long time. It's interesting for me to see, how as the leader of Intelsat I can ensure that we have a good position in terms of all this activity.

It has been a transformational year for Intelsat-the most active year that Intelsat has

"What I want to do and what I'm doing is working to establish a new culture that leverages the best aspects of each company..."

--Intelsat CEO David McGlade

Q.Are you satisfied with your first year?

job personally and for the company.

A. I'm never satisfied. I drive very hard. I am satisfied we had a

very strong year, our financials were very good however you look at it from either from a revenue standpoint, a cash flow or

However, I feel that there's more to be done. I'm not someone

who likes to make incremental changes. I like making companies

as strong as it can really be. So, I'm always looking to do a better

profit standpoint. We operated the company very well.

Q. How is the merger with PanAmSat progressing?

A. In terms of the regulatory approvals, we're getting much closer, clearly. We're pushing as hard as we can to complete the process but do it well. The

Department of Justice is the main focus this week and that will ever had. When we look at the merger with PanAmSat which will take another few weeks to complete. We're still saying second change Intelsat forever, or when we look at how fast things are or third quarter, obviously, we are already in the second quarter, moving and looking at the improvements and the change in so we'll see where that ends up. culture that I look forward to within Intelsat, which is about more In terms of the integration process overall, I'm very pleased with being customer-centric, it's about putting everything in place to be as successful as possible. It's really about processes, people, systems-everything we can do to make the company strong but also have the creativity and the drive to make sure we've got a pipeline for future activities. It's doing the here and now very well of preparing for the future and building a them successful. sustainable platform for growth. All those things are key areas of focus for me.

how that's progressed. I've got a world-class leadership team in place. We are going through all the levels of management within the company to make sure we have the strongest company possible, with the best people. This goes back to what I said before-get the right people and give them the enablers to make

Q. Intelsat and PanAmSat combined has over 1,400 employees. How much of that would be retained in the new Intelsat? What are you telling the current employees and how are you managing that process?

A. I think we've gotten very good in terms of how we communicate with our employees. We share concerns so that employees can ask confidential questions or in the

open and we respond to those. We have many employee forums on a regular basis. We hit it head on. To me it's 'Communicate, communicate, communicate' when there is uncertainty. You got to be straight with people, you have to be honest with them. If you don't know something you say you don't know it and if you know it, you give them the information they need.

Q. Obviously the merger will affect not just human resources but your other assets as well, such as satellites and facilities. Can you elaborate on that?

A. Surprisingly, we are keeping more facilities that we thought we would. We are doing that because the customer demands it. However, we are rationalizing all of our assets over time. Once we have the regulatory approval process behind us, we will be able to look at our fleet and determine

how can we better utilize the fleet and over time, how do we make sure we have the right configuration in term of small or medium or large

"Intelsat went from an intergovernmental organization to the way "

-Intelsat CEO David McGlade

satellites. What kind of capacity we want on those satellites based on our orbital orbital slots. How do we make sure we have the capacity to grow new applications. All of those things will be taken into account. We wouldn't want to reduce our capital expenditures to a level that will hurt growth. We want to grow

We have made decisions, however, about how we will be flying our satellites. We are going to have two discreet, separately located facilities using the same software, cross-train people and if for some reason we have a failure in one location, there will be an immediate hot transfer to the other location. So I think we will have the most robust backup facilities for our satellites out of any operator in the world. That's our goal.

Q. The perception is that Intelsat and PanAmSat are two very different corporate cultures, how are you handling this?

A. I see that as an opportunity. There's a view that PanAmSat is really entrepreneurial but it also has the Hughes culture out of General Motors which is not that at all. Intelsat was seen as being more bureaucratic and frankly it's changed over the years. Intelsat went from an intergovernmental organization to privatization and its gone through a journey but it hasn't gone all the way.

> What I want to do and what I'm doing is working to establish a new culture that leverages the best aspects of each company. I like people feeling that they are challenged. I like the entrepreneurial spirit. But I also like discipline and processes. And bringing those two together towards a new way of working-a new ethos-and that will be part and parcel of how I will be operating it going forward towards a new culture. We are going to be fast, we are going to be thorough, customer-centric, we are going to drive for results. It will be a meritocracy and it will one where we strive to be the best we can be and that we are never satisfied.

> > Q. What will the new company be called?

A. The company will continue to be called Intelsat. I use the term "new Intelsat" for the new

company. Here's the thinking: PanAmSat has a very strong name, especially in media in the Americas but Intelsat has a global name. So what we are doing is that we are really going to refresh the Intelsat brand and it will be a global brand.

Q. How do you see the "new" Intelsat by the end of 2006?

A. We close the deal with PanAmSat successfully. We 've successfully gone through all the integration planning and as much of the integration execution as possible. Another good financial year and that we have customers that are happy and employees that are happy. That will be a lot to ask for, but that's the goal.

Interview with Loral Skynet President Pat Brant continues next page.....

privatization and it's gone through a journey but it hasn't gone all

but we also want to use our assets well.



Interview with Loral Skynet President Pat Brant

Q. The big news was last month's expiration of the non-compete

clause with Intelsat and your re-entry into the North America Fixed Satellite services market. Since then what steps have you taken to reestablish the company in the US market?

A. It's interesting that you ask that question, because it was last year here at the NAB when I told reporters of our plans to re-enter the North American fixed satellite services market. During the year, as part of those plans we have lined up a number of transponders on SatMex 6 to be launched in the next 60-90 days. We have capacity still available in Telstar-14/Estrella do Sol satellite which we call our NAFTA beam. We also have capacity on IA-7 and IA-6 which were part of the Loral fleet prior to the divestiture. At the same time, we are working on several fronts currently to acquire additional satellite capacity.

Our plan calls for us not to immediately re-enter the US video or broadcast market. While we will be doing some work there, our focus has been more on enterprises and their

video and data needs and smaller niche video broadcast requirements that we can handle immediately. The large video market requires certain things that we do not have available at this moment but we are working to acquire—like the cable neighborhoods with the antennas pointed at the appropriate satellites at this point. We got our plan and we are working it and it will take time but we believe strategically we are focused in the right direction and that over time we will become a very big player in the US market.



"...less than 14 satellites and you have trouble getting the scale you need to be effective. But we believe that when you get above 20 or 25 satellites the ability to effectively manage that fleet becomes very difficult. ..."

Q. How long will it take?

A. We will make progress very quickly in the US market, but in the broadcast/video market I suspect it will take anywhere from 12-18 months.

Q. I'm sure you are aware that you are up against very stiff competition?

A. There's no doubt, but we've competed with these organizations before and we have proven over the years that we know how to do that. At Loral we have done some incredible things over the years. We were the first company to provide internet over satellite in 1996. We grew from one satellite to 10 satellites in the '90s in just a few years. We are actionoriented, we have the resources and it is our intention to prove again that we can

succeed and do it very quickly.

We are looking to grow both organically by building our own satellites but also through acquisitions and we are actively looking at a number of opportunities on a global basis. We believe our

expertise at operating satellites, in providing solutions to enterprises and the data maket and our expertise in providing video is very strong and puts us in a very competitive position.

Q. What new satellites are you planning?

A. There are various discussions in progress, nothing that I can announce yet and I but if you go to CommunicAsia or call me in the next 90 days we may have other announcements for you.

Q. What direction is your company going?

A. We at Loral Skynet believe that the optimal size of a global satellite fleet is about 15-or somewhere between 14 to 18 satellites. We are intent on building our fleet to that size and then evaluating where we are. We've got a two-year, a five-year and a 10-year plan. What we think the plan does is it gives us the road map to becoming a very significant global FSS operator.

Q. In the new environment with the pending Intelsat and

PanAmSat merger, how can you compete with companies with over 50 satellites or an SES Global with almost 40?

"...Based on what we have done in the past, how quickly we've shown that we can grow, our responsiveness to the marketplace, makes us as much as a potential acquirer as a potential acquisition for someone ... " --Loral Skynet President Pat Brant

Q. When we last met at the PTC in Hawaii you said that consolidation is good for the industry and this is the best time to be in the business, do you still believe that?

A. Yes I still do. Although having two competitors in a market is probably not so good but having four or five really good solid and professional organizations can be very effective in meeting the needs and the demands of the market place, doing it in a cost-effective manner and fulfilling the promise of satellite technology and how much it could help global communications.

The idea though that you if get down to one or two vendors only can be a little more problematic as a duopoly may affect prices negatively for the user and it may slowdown innovation and creativity.

Q. Some analysts view your current position to be very vulnerable to takeover or acquisition, how do you feel

A. It's a funny thing, less than 14 satellites and you have trouble getting the scale you need to be effective. But we believe that when you get above 20 or 25 satellites the ability to effectively manage that fleet becomes very difficult. We believe we can differentiate ourselves by being the most effective and efficient satellite operator with a global fleet that provides the services that satellites are best at providing for the areas of the world where those services are needed. For instance, the US video market is a terrific marketplace and we intend to be a player there. However, the markets of the Middle East and Africa, they need to have effective and efficient data for their businesses and economies to work. Video is nice but what their real focus is data. And in the Asian markets both video and data are very robust. So it's our intention is to be the most efficient operator providing the most solid services in the parts of the world where they are needed most. And you don't need 51 satellites to do that. There are only so many spots in the arc and over specific regions how many satellites can you have? Having many satellites can give one the ability to grow revenues in very large numbers if they are managed effectively, but I think with a smaller fleet that is managed and grown the way I know we can do-I think we can compete on the same plane.

about that?

A. It certainly could be the case, but I believe that our owners, our board of directors and our investors have made a commitment to grow our business and that anything can happen. Based on what we have done in the past, how quickly we've shown that we can grow, our responsiveness to the marketplace, makes us as much as a potential acquirer as a potential acquisition for someone.

I think it is important to understand that we have just gone through over the last several years a process that allowed us to look internally and understand what we did well and to see what we did that wasn't done so well and allowed us to clean that up. Those that we did well we were able to emphasize and continue and grow, while those we didn't do too well we were able to eliminate. I think we are in a very strong position from a cultural and growth operational view and from a business view we are in excellent shape-we have very little debt, we have long-term contracts with customers and great satellite utilization rate and our costs are very predictable. So, in sum, we are n a very good place right now and we intend to grow, we intend to invest and we got resources available and the future looks very good for Loral Skynet. **SM**

REGIONAL UPDATE

RFID: Potential Satellite Applications

by Bernardo Schneiderman

adio Frequency Identification (RFID) is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders. An RFID tag is a small object that can be attached to or incorporated into a product, animal, or person. RFID tags contain silicon chips and antennas to enable them to receive and respond to radio-frequency queries from an RFID transceiver. Passive tags require no internal power source,

products, do not have their own power, which means they must be activated and queried by nearby reader devices. By themselves, passive tags therefore do not have the ability to communicate via satellites. Information contained on passive RFID tags, however, can be picked up by nearby reader devices that transmit their presence and location to satellites.

The integration of RFID tags with GPS and satellite communications has many potential uses. The main market segments that RFID



whereas active tags require a power source.

An RFID system typically consists of several components: tags, tag readers, edge servers, middleware, and application software. Enabling an RFID unit for satellite communication generally means adding a GPS location system, satellite transceiver and satellite modem to this package. Passive RFID tags, which are used for most consumer

recent contracts signed by vendors like Comtech Mobile Datacom that received orders totaling \$6.3 million on its Movement Tracking System with the U.S. Army last December 2005. The orders are primarily for the supply of the next generation Model MT 2012 mobile satellite transceivers, which feature embedded RFID and secure GPS capabilities along with both ruggedized and control station computers. Comtech's Model 2012 Transceiver features Savi Technology's RFID Reader,

The global

which Savi also has deployed to the U.S. Department of Defense's In-Transit Visibility (ITV) network.

Savi Technology, a provider of RFID supply chain solutions, and Comtech Mobile Datacom Corp, a provider of Global Positioning Systems (GPS), satellite and other advanced communications systems, have developed an integrated product that continuously tracks and manages both transport vehicles and the cargo they carry while in-transit and "on-the-move." Both military and commercial customers can mount the two-way communication kit to the roof of the driver's cab, enabling them to automatically locate, manage and now redirect cargo in near real-time while and wherever it's being transported.

Developed initially for the U.S. Army and also available to commercial customers, Comtech's product is domeshaped and about the size of an oldfashioned breadbox. Logistics personnel communicate back and forth via two-way text messaging with the vehicle's crew about their location, environmental conditions and diversions from scheduled routes, and can redirect the shipment to where it's most urgently needed at the time.

TransCore is another company that offers wireless RFID products that can be integrated with its GlobalWave satellite communications services. GlobalWave devices include two new satellite data communication terminals, one for basic tracking applications and one that enables both tracking and

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REGIONAL UPDATE



RFID/GPS/Satellite Transceivers developed by Comtech Mobile Datacom (photo courtesy of Comtech Mobile Datacom).

monitoring with a full suite of sensors. Both enable two-way, all-satellite, nationwide communication between fleet operators and assets. GlobalWave systems use geostationary satellites to relay two-way, low-speed data bursts between the communications terminals on customer assets and computers in TransCore's Network Operations Center (NOC). The company's Global Positioning Satellite (GPS) capability allows tracking and monitoring of mobile assets to within 30 feet.

Another company in this market is Digital Angel that develops advanced RFID and GPS technologies for applications, and its services include identification and monitoring of pets, humans, fish and livestock through patented implantable microchips as well as message monitoring of aircraft in remote locations through integrated GPS and geosynchronous satellite communications systems. The United Network for Worldwide Disaster Aid (UNWDA), an EU-based team of experts deployed at catastrophic events throughout the

world, has selected Digital Angel Corporation's implanted electronic RFID microchips for its specially-trained canine search and rescue teams based in diverse countries. A total of 49 of the group's 178 dogs have been implanted with the company's microchip and many of the "chipped" dogs have recently been deployed in emergency aid areas including Afghanistan, Pakistan, the Caribbean, and China. The implanted microchip allows a handler to identify the dog as well as such its age, medical information (vaccinations, wounds, surgical history), training, previous missions, behavior, preferred environment, and psychological profile.

Some market research companies predict that the market for RFID/GPS integrated with satellites will expand from \$504 million in 2005 to few billions in 2010. Major RFID markets include supply chain management for government and industrial organizations, security services such as monitoring of drugs against counterfeiting, pet and asset location services, border and immigration control, and tagging of automobile keys to prevent theft and others applications to come. **SM**



Bernardo Schneiderman has over 20 years of experience in satellite communications and is the President of Telematics Business Consultants based in Irvine, CA, He can be reached at bernardo@tbc-telematics.com

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MARKET INTELLIGENCE

In the "Oil & Gas Patch":



Satellite Communications and the Mission Critical Imperatives of a Key Vertical Market

by Martin Jarrold, Chief, International Program Development

For a number of key vertical markets, all across the many regions of the world, there is an increasing reliance on satellite-based communications platforms – and in some instances satellite-terrestrial hybrid platforms – to meet the mission critical networking requirements of commercial and government organisations with multiple operational and field facilities, often widely separated by geography, and typically widely differentiated by degrees of access to reliable and costeffective terrestrial communications services.

Nowhere is this fact more evident than in the "oil & gas patch".

In both exploration and production, the oil and gas industries operate in some of the most challenging of physical environments in all regions of the world, including many parts of Africa and across the Middle East, where satellite-based connectivity is widely identified as an essential communications platform for the networked delivery of voice, data and video business applications.

In recognition of this, and in order to further build on existing GVF platforms which serve to facilitate key discussion opportunities within dedicated networking forums – within which the subject of the communications imperatives for such key verticals as oil & gas can be fully addressed – the satellite and wider ICT community is preparing for a major conference on **Oil** & Gas Communications for Africa and the Middle East, 15-17 May, Cairo. (www.gvf-events.org) A number of GVF member organisations have committed to the support of this important event through their generous sponsorship – including Schlumberger Connectivity Services (lead sponsor), Codan, SES-Americom, Satlynx, Stratos Global, Comtech EF Data, and Alkan Telecom – and have thereby facilitated GVF preparations for the successful delivery of a comprehensive programme which will include a range of "Showcase" and "Applications" case studies, as well as such interactive roundtable panel themes as:

- Executive Overview Roundtable: New O&G Net working Communications – Evolution of the Application & the Dynamics of Technology Trends
- Bandwidth Dynamics: O&G Indus try Demand, Telecoms Industry Supply – The Price & Quality of Service Nexus
- Hybridising the O&G Communica tions Solution Offering over Satellite & Terrestrial
- Ensuring the O&G Industry Mission Critical Communications Dynamic: Evolving National/ Regional Licensing & Regulatory Environments to Enhance O&G Sector Growth
- Maintaining the O&G Industry Mis sion Critical Communications Dy namic: Satellite Links in Surviving through Disaster Situations
- Oil & Gas Communications: Varia tions in the Regional Bandwidth Supply Dynamic – the Middle East & Africa versus the North Sea
- Oil, Gas & the Environment: Using

Information & Communication Technologies to Manage the Resources Exploitation Footprint

Companies from the communications industry and the oil & gas sector participating in this programme, include (in alphabetical order): Agiba Petroleum Company, Alkan Telecom, British Telecom, Cable & Wireless, Centurion Petroleum Corporation, Codan, Comtech EF Data, Egyptsat, Gilat Satellite Networks, Global Beam Communications, Hughes Network Systems, Inmarsat, Intelsat, International Egyptian Oil Company, LINKdotNET, Nilesat, Rashpetco, Satlynx, SES-Americom, Siemens Egypt, Stratos Global, Thuraya, and Universal Solutions, with the Conference first day Industry Address provided by Schlumberger Connectivity Services.

The oil & gas sector has shown its recognition of the importance of this satellite communications industry initiative, with more than 20 energy companies from across the Middle East region and the oil producing nations of Africa already having registered approximately 60 representatives to attend Oil & Gas Communications: Africa and the Middle East at the J W Marriott Hotel, Mirage City. Registrations are expected to exceed 100 well before the event.

The list of energy companies includes: British Petroleum, GUPCO (a BP joint venture), Agiba Petroleum, British Gas, Centurion Petroleum Corporation, Devon Petroleum, Dolphin Energy, Egypt Gas, ExxonMobil, International Egyptian Petroleum Company (an

MARKET INTELLIGENCE

ENI joint venture), Khalda (an Apache joint venture), Qatar Petroleum, Saudi Aramco, Rashpetco, Chevron, SIPetrol, Western Geco, Babetco, EGas, Suez Oil, Qarun Petroleum Company, Petroleum Air Services, and these will join conference speakers from a wide range of companies from the communications solution provider sector, and the oil & gas end-user community.

In focusing on the core issues listed above, **Oil & Gas Communications: Africa and the Middle East** will create opportunities for companies in a major global and regional vertical to call upon ICT solutions providers – whether based on terrestrial wireline or wirelesss, or satellite – to match their offerings more closely to the specific demands and requirements of this industry sector.

SatNews Online is a Media Partner for the conference and will provide coverage of the event in the next Market Intelligence report from GVF.

On 17 May, following the two days of conference proceedings, two further important events will take place covering: (1) a Satellite Regulatory & Policy Initiative for the Oil & Gas Sector in Africa and the Middle East; and, (2) a training course to provide an 'Introduction to Satellite Communications'.

The Satellite Regulatory & Policy Initiative meeting - 'Cost Effective Communications for Emerging Oil & Gas Markets' - will address an issue of critical commercial importance to the oil & gas sector: What steps can be taken to address the regulatory conditions that prevent cost-effective access to communications, particularly in emerging oil & gas markets? The Summit will include leading representatives of the oil & gas industry, as well as service providers, consultants and legal experts in open-forum discussions, with the aim of establishing a consensus-based plan of action.

The 'Introduction to Satellite Communications' course is designed for professionals who are new to satellite communications, specifically sales, marketing and administration professionals who need a basic understanding of all aspects of satellite communications. This half-day course provides a basic foundation to the understanding of key fundamentals in the satellite communications business and covers: Satellite technology; Ground segment, or earth station equipment; Applications of satellite communications; Regulatory issues; and, Current and future trends in the industry. The course is directed at non-technical professionals in the communications and information technology industries who require a basic grasp of this aspect of modern communications networking.

Energy companies and telecommunications services providers can register their conference delegates via the Conference website at <u>www.gvfevents.org</u>, where you will also find the latest conference programme updates together with details of the conference venue and its special delegaterates for accommodation. Further information can also be obtained from <u>martin.jarrold@gvf.org</u> and + 44 1727 884513.



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

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