



2006 - Year In Review

• New Horizons

SES Global Launches New Broadband Satellite Service



NASA's Allocates \$500 million for the Commercial Orbital Transportation Services (COTS) Program

• Mergers & Changes



• Lessons Learned & Looking Forward



2007?

**Recover your
network connections
...quickly via satellite**



REDiSat Network™
Emergency communications
from the ground up

TABLE OF CONTENTS

Vol. 4 No. 8, December 2006

Click on the title to go directly to the story

COVER STORY

FEATURE

FEATURE

VIEWPOINT



19 / Top Stories of 2006

By Virgil Labrador

Satnews Managing Editor Virgil Labrador look back on the top stories of 2006 and their impact on the satellite industry.



23 / CEOs' View on the Year that Was and Prospects for 2007

CEOs of leading satellite companies share their views on the most significant events of 2006 and what's in store for 2007



30 / 2006: Europe's Action-packed Year

by Chris Forrester

SatMagazine Europe-based editor, Chris Forrester reflects on the most significant events in the European satellite industry in 2006.



34 / Technology Solutions for Offshore Markets

by Bruce Elbert

A look into the potential demand for satellite services and solutions in the growing oil and gas offshore communications market.

REGULAR DEPARTMENTS

3 / Notes from the Editor

4 / Calendar of Events

5 / Industry News

10 / Executive Moves

15 / New Products and Services

23 / Technology Update: Satellites and Wifi

by Bernardo Schneiderman

38 / Vital Statistics

37 / Market Intelligence: Disaster Recovery, Emergency Management and Business Continuity: Learning to Talk the Talk

by David Hartshorn

40 / Advertisers' Index/ Stock Quotes

NOTE FROM THE EDITOR

Private Equity Firms Moving to Other Segments of the Satellite Industry

What the Private Equity Firms (PEFs) has done to the Operators segment of the industry, with the highly visible takeover of PanAmSat and Intelsat among others, it is now beginning to do in the satellite services and ground equipment segment. This has not quite had the dramatic impact as it did in the Operators side of the business but is slowly and surely making its impact nonetheless. In December 2004 PEFs Skyterra and

Apollo announced it is purchasing VSAT manufacturer and operator Hughes Network Systems and in February this year, ABRY Partners invested \$200 million in oil and gas communications services provider CapRock Communications. Just last month Apax Partners, the same PEF that purchase mobile communications operator Inmarsat a few years ago, acquired Telenor Satellite Services. Earlier in the year, APAX acquired France Telecom Mobile Satellite Communications.

The Ground Equipment and Satellite Services segments of the industry is a little more fragmented with a lot of smaller companies than the Operators side of the business. This makes the purchase of some companies a little less attractive to PEFs. But this would only fuel more consolidation in this segment. We have seen some notable ones including Cisco's merger with Scientific Atlanta, Viasat's purchase of Efficient Channel Coding, Inc., Tandberg's purchase of Skystream and Thrane & Thrane's acquisition of Nera's Mobile Satellite Communications.

The jury's still out on the ultimate impact of PEFs on the industry having only began to make its mark a little over two years ago. At the recently concluded, ISIS Satellite Investment Symposium in New York City organized by ISCe, the general feeling about PEFs has been mainly positive. One thing is for certain, PEFs are here to stay and that ultimately is a vote of confidence in the long-term viability of the global satellite industry.

Virgil Labrador

SATMAGAZINE.COM

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

EDITORIAL

Silvano Payne
Publisher

Virgil Labrador
**Managing Editor
 and Editor, North America**

Chris Forrester
**Editor, Europe, Middle East
 and Africa**

Bernardo Schneiderman
Editor, Latin America

Peter Galace
Editor, Asia-Pacific

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

David Hartshorn, Martin Jarrold
Contributing Writers, Europe

Baden Woodford
Contributing Writer, Africa

Jill Durfee
 (jill@satmagazine.com)
Advertising Sales

Joyce Schneider
 (joyce@satnews.com)
Advertising Sales

Satnews Publishers is the leading provider of information on the worldwide satellite industry. For more information, go to www.satnews.com

Cover Design by: Simon Payne

Copyright © 2006
 Satnews Publishers
 All rights reserved.



Dec. 4-8, Hong Kong, China

ITU Telecom World 2006

Elizabeth Lake

Tel.: +41 22 730 6039 / Fax: +41 22 730 64 44

Web: <http://www.itu.int/WORLD2006>

Dec. 5-7, Orlando, Florida, USA

Florida Space 2006

Tel.: 719.576.8000 / Fax: 719.576.8801

Web: www.floridaspace.org/

Dec. 5-7, Tyson's Corner, Virginia, USA

DoD Commercial SATCOM Users Workshop

David Cavossa Executive Director

Tel: (202) 349-3651

E-mail: dcavossa@sia.org

Web: www.sia.org

Dec. 10-13, Dubai, UAE

Telecoms World Middle East 2006

Sarah Pegden

Tel: + 44 (0) 207 827 4171 / Fax: + 44 (0) 207 242 1508

E-mail: sarah.pegden@terrapinn.com

Web: www.terrapinn.com/2006/twme/

2007

Jan. 14-17, Honolulu, Hawaii, USA

PTC'07: Beyond Telecom

Pacific Telecommunications Council

Tel.: +1.808.941.3789 / Fax: +1.808.944.4874

Email: ptc07@ptc.org

Web: <http://www.ptc07.org>

Jan. 30-31, Rio de Janeiro, Brazil

IPTV World Forum Latin America

Vera Benson

Tel: +44 1173 116 220 / Fax: +44 1173 116 221

E-mail: verab@junction-group.com

Web: www.iptv-latinamerica.com

Feb. 5-8, Cairo, Egypt **Cairo ICT**

Mahmoud Mazen

Tel: +202 4144585 / Mobile: +2 010 1102570

Fax: +202 4171371

E-mail: m.mazen@cairotelecomp.com

Web: www.cairoict.com

Feb. 19-22, Washington, D.C., USA

Satellite 2007

Tel: +1-508-743-0512 or +1-800-915-9801

Email: inquiry@satellite2007.com

Web: www.satellite2007.com

Mar. 5-6, London, UK

The Connected Home

Dee Anthony

Tel: +44 1173 116 220 / Fax: +44 1173 116 221

E-mail: deea@junction-group.com

Web: www.the-connected-home.co.uk

Mar. 5-7, London, UK

IPTV World Forum

Ian Johnson

Tel: +44 1173 116 223 / Fax: +44 1173 116 221

E-mail: ian@junction-group.com

Web: www.iptv-forum.com

Mar. 7, London, UK

TV over Net

Ingrid Anusic

Tel: +44 1173 116 220 / Fax: +44 1173 116 221

E-mail: ingrida@junction-group.com

Web: www.tvover-net.com

Mar. 12-16, Johannesburg, South Africa

SatCom Africa 2007

Brian Shabangu

Tel: +27 11 463 6001 / Fax: +27 11 463 6903

Email: brian.shabangu@terrapinn.co.za

Web: www.satcomafrica.com

Mar. 21-23, Nanyang Technological University, Singapore

3rd Asian Space Conference

Timo Rolf Bretschneider

Phone: +65 – 6790 6045 Fax: +65 – 6792 6559

E-mail: astimo@ntu.edu.sg

Web: <http://pdcc.ntu.edu.sg/ASC2007>

April 14-19, Las Vegas, NV, USA

NAB 2007

Tel: (202) 429-5300 / Fax: 202 429 4199

Email: nab@nab.org

Web: <http://www.nab.org/>

INDUSTRY NEWS

Air Force Awards Boeing \$674-M Launch Contract

WASHINGTON — The U.S. Air Force has awarded Boeing Company (Integrated Defense Systems, Huntington Beach, CA) an Evolved Expendable Launch Vehicle (EELV Launch Capability (ELC) contract valued at \$674,116,428.

The U.S. Air Force said the ELC contract is for a 16-month period and provides the infrastructure required for launch capability to support four launches per year, with one of those from the west coast. Launch capability includes prime and supplier critical skills retention; engineering; program management; launch and range site activities; and mission integration. Since previously awarded mission prices included this same scope of work, those contracts will be adjusted to remove any duplication in scope.

Air Force's new acquisition strategy incorporates two separate contracts for each launch provider: ELC, and a Launch Service contract (ELS). ELC contracts are a standard government negotiated procurement and thus fundamentally different from the previous commercial type contracts. The new contracts require traditional cost reporting from the contractors, and will comply with Cost Accounting Standards and the DoD Earned Value Management Systems policy.

AMC-18 Satellite Slated for December 8 Launch



Ariane 5 approaches the Final Assembly Building at Europe's Spaceport, where its dual-satellite payload will be installed.
(Arianespace photo)

BETZDORF, Luxembourg — SES Global has announced that the Americom-18 (AMC-18) satellite was delivered to Kourou, French Guiana on November 6 to be readied for its Ariane 5 ECA launch on December 8. The A2100 spacecraft, procured by SES Global Satellite Leasing Ltd. Isle of Man, will be commercially operated by SES Americom.

The satellite, built by Lockheed Martin Commercial Space Systems (LMCSS), is being launched by Arianespace for service at the 105 degrees West longitude orbital position.

AMC-18 is an all C-band satellite, designed to offer full North American coverage including all 50 U.S. states, the Caribbean and Mexico from 105 degrees West longitude. It will become the third satellite in this section of the "arc" delivering cable programming; the other two satellites are AMC-1 at 103 degrees West and AMC-4 at 101 degrees West. Working with its customers and the cable industry, Americom has installed triple-feed antennas to cable head-ends serving half of the U.S. cable households to facilitate their reception of programming from all three spacecraft.

Defense Spending on Space Worth More Than \$22-B Today, to Reach \$28-B by 2010

DUBLIN, Ireland — World turnover generated from commercial space services and government space programs reached \$103 billion in 2004 and is forecast to exceed \$158 billion in 2010 as more than \$18 billion is spent annually on the development of space systems.

According to the "2005 State of the Space Industry" report from Research and Markets, U.S. Defense spending on space has grown from around \$15 billion in 2000 to more than \$22 billion today and is forecast to reach \$28 billion by 2010.

The report noted that India and China have joined the U.S., Europe, Russia, and Japan as having fully independent capabilities. India and China have joined the U.S., Europe, Russia, and Japan as having fully independent capabilities.

It described satellite-to-consumer television as a \$40 billion worldwide market.

First released in 1997, the report was developed to provide industry, government, and financiers with an independent assessment of the trends and issues affecting the industry. The report brings quantitative and qualitative analysis and commentary on the developments in the space industry. By providing a top-level overview of the entire space industry, a sector by sector understanding of the issue and consensus revenue estimates and forecasts, the report can be an invaluable business development tool.

INDUSTRY NEWS

Astrium to Build New Astra Satellite for Launch in 2009

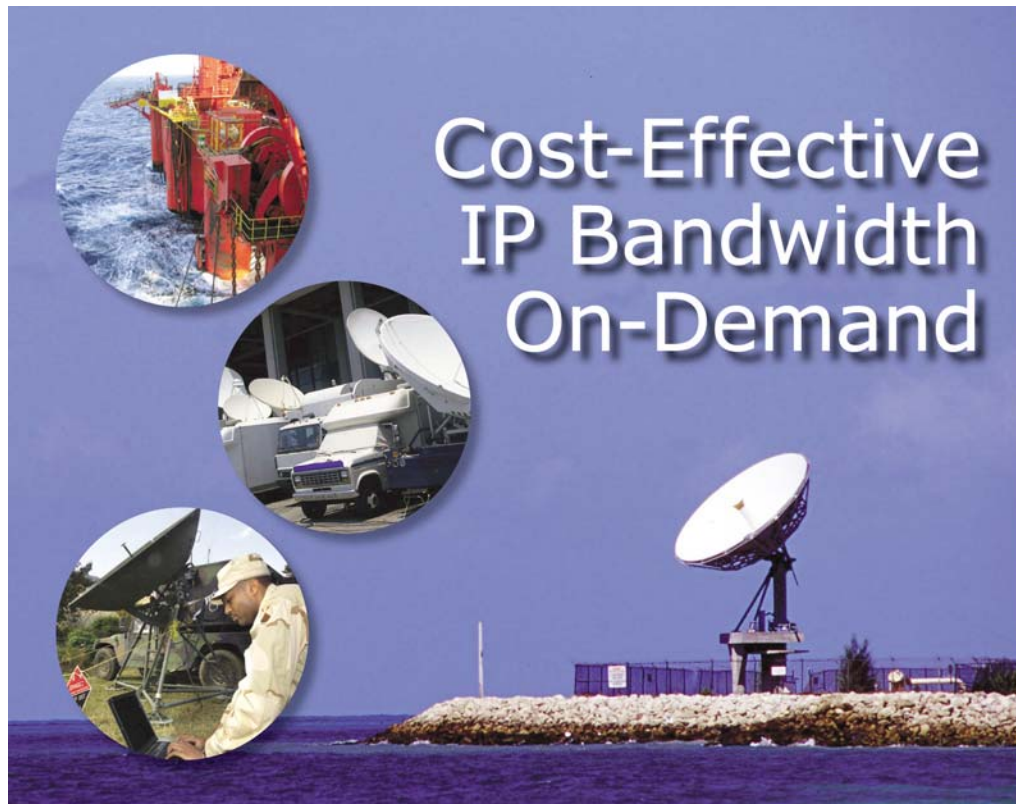
BETZDORF, Luxembourg — SES Astra, an SES Global company, has announced that it has awarded the contract for the construction of its new satellite, Astra 3B, to the European satellite manufacturer Astrium. As prime contractor for Astra 3B, Astrium will design and build the satellite.

Astra 3B will be a state-of-the-art Ku and Ka-band spacecraft designed for the distribution of both direct-to-home (DTH) broadcast services and two-way broadband services across Europe. After Astra 2B and Astra 1M, Astra 3B is the third Astra satellite to be built by Astrium.

SES Astra said the satellite will have 52 transponders of which 20 transponders are to replace existing in-orbit capacity and 32

transponders which will create new capacity, thereby strengthening 23.5E as the third orbital hotspot for European DTH services. Astra 3B is expected to be launched end of 2009.

Astra 3B will be built on a Eurostar E3000 platform, the latest version of Astrium's Eurostar series. Seven Eurostar E3000 are currently in operation in orbit, and 10 more are at various stages of production. To date, 45 Eurostar satellites of various series have been ordered from Astrium, 31 of which have been successfully launched and have proven to be highly reliable in commercial service.



Cost-Effective IP Bandwidth On-Demand

Would you like more control of your satellite links? Comtech EF Data's feature-rich and cost-effective bandwidth and capacity management products – Vipersat Management System & Vipersat Circuit Scheduler – integrate with our modems to provide a seamless IP-based infrastructure for satellite networking up to 155 Mbps. The solution is based on dynamically managed Single Carrier Per Channel (*dSCPC*), providing automated switch up/tear down of SCPC links and dynamic bandwidth adjustment depending on traffic type.

Comtech EF Data's *dSCPC*:

- Facilitates true bandwidth on-demand
- Enables dedicated IP connections where, when and how needed
- Provides significant recurring operating expense savings

Our team of network specialists are prepared to assess where our solutions can benefit your network. To learn more, contact us today.



+ 1.480.333.2200
www.comtechefdata.com
sales@comtechefdata.com

INDUSTRY NEWS

Boeing Delta II Delivers Lockheed-built GPS Satellite to Orbit



A Boeing Delta II launch vehicle successfully delivers to orbit a replenishment Block IIR Global Positioning System (GPS) satellite for the U.S. Air Force. The Delta II rocket carrying the GPS IIR-16 (M) satellite lifted off from Space Launch Complex 17A at Cape Canaveral Air Force Station, Fla., at 2:12 p.m. Eastern time, deploying the satellite to a transfer orbit 68 minutes later. (Boeing photo)

provides increased signal power to receivers on the ground, two new military signals for improved accuracy, enhanced encryption and anti-jamming capabilities for the military, and a second civil signal that will provide users with an open access signal on a different frequency.

CAPE CANAVERAL AIR FORCE STATION, Fla. — A Boeing Delta II launch vehicle successfully delivered to orbit on Nov. 17 a replenishment Block IIR Global Positioning System (GPS) satellite for the U.S. Air Force.

The Delta II rocket carrying the GPS IIR-16 (M) satellite lifted off from Space Launch Complex 17A at Cape Canaveral Air Force Station, Fla., at 2:12 p.m. Eastern time, deploying the satellite to a transfer orbit 68 minutes later.

The satellite, designated GPS IIR-16M, is the third in a series of eight Block IIR-M spacecraft that Lockheed Martin Navigation Systems is developing for its customer, the Global Positioning Systems Wing, Space and Missile Systems Center, Los Angeles Air Force Base, Calif. The Block IIR-M series includes new features that enhance operations and navigation signal performance for military and civilian GPS users around the globe.

Each IIR-M satellite includes a modernized antenna panel that



Boeing has received authorization from the U.S. Air Force to begin work on the fourth satellite in the Wideband Gapfiller Satellite (WGS) system. WGS-4 is the first option to be exercised on the WGS Block II contract, which was finalized last month. (Boeing photo)

Boeing to Build Fourth U.S. Air Force Wideband Gapfiller Satellite

ST. LOUIS — The U.S. Air Force has awarded Boeing Company a \$299.8 million contract for the production of the fourth Wideband Gapfiller Satellite (WGS). This is the first option to be exercised on the WGS Block II contract, which was finalized last month.

The Block II contract is valued at \$1.067 billion, if all options are exercised, according to Boeing.

WGS-4 will be similar to the three Block I satellites Boeing already is building, but will include a radio frequency bypass capability designed to support airborne intelligence, surveillance and reconnaissance platforms requiring additional bandwidth. The RF bypass will support data rates of up to 311 megabits per second. The 13-kilowatt WGS satellites are based on Boeing's 702 models and are designed to provide improved communications support for America's warfighters. WGS-4 is expected to launch in early 2011.

WGS will augment and eventually replace the Defense Satellite Communication System (DSCS) currently in orbit. One WGS satellite will provide more throughput than the entire DSCS constellation, which translates to improved effectiveness of worldwide forces and ultimately saves lives. The first WGS Block I satellite is scheduled for launch in mid-2007.

Ciel Satellite Files Nine Applications for Orbital Positions

OTTAWA — The Ciel Satellite Group has filed nine applications with Industry Canada for multiple satellite orbital positions across several frequencies.

INDUSTRY NEWS

Ciel said the applications were submitted in response to Industry Canada's Call for Applications to License Satellite Orbital Positions, the largest in Canadian history. Applicants who are awarded licenses from the call will have the opportunity to build and launch satellites to bring new spectrum into use for DTH, HD and broadband services, for the benefit of Canadians in all regions of the country.

The Government of Canada has been highly supportive of a dynamic and competitive marketplace for satellite services. In 2004 Ciel was awarded an orbital position at 129° W by Industry Canada and has since commissioned Alcatel Alenia Space to build Ciel-2, a Spacebus 4000 C4, the largest Spacebus class satellite ever built. The Ciel-2 satellite is scheduled to launch in late 2008 and to operate for at least 15 years. With Ciel's initial investment and with awards from the current Call, the company will be positioned to contribute significantly to a more innovative and competitive industry for Canada.

Ciel is a Canadian owned and controlled organization that is supported by a strong combination of partners, including BPC Telecommunications Corp, a company controlled by Borealis Infrastructure who is part of the OMERS Pension Plan's group of companies; Canadian satellite pioneer Brian Neill; and SES Americom, an SES Global Company (Luxembourg and Paris Stock Exchanges: SESG), a worldwide leader in the satellite industry.

ICO Asks FCC to Extend Construction and Launch of Its Satellite

RESTON, Va. — ICO Global Communications (Holdings) Limited has requested the U.S. Federal Communications Commission to extend for a short period the remaining four milestone dates outlined in its authorization for the construction and launch of its satellite.

ICO said the brief extension is needed to accommodate manufacture and delivery issues encountered by subcontractors for its satellite manufacturer, Space Systems/Loral, Inc. ICO requested

that the launch of its satellite be extended until November 30, 2007, instead of the current milestone date of July 1, 2007, and that certification that the mobile satellite services system is in operation be extended until December 31, 2007 instead of July

Who says you can't
get more for less?

see the next generation at

**SATELLITE 2007
BOOTH 517
WASHINGTON, D.C.**

WWW.ARESYS.COM

408.732.1710

INDUSTRY NEWS

17, 2007.

ICO also asked that two remaining intermediate milestone dates be extended as follows: complete reference performance test to April 30, 2007, instead of January 1, 2007, and complete thermal vacuum test to June 15, 2007, instead of March 1, 2007.

ILS Proton Successfully Launches Arabsat's BADR-4 Satellite

BAIKONUR COSMODROME, Kazakhstan — A Russian-built Proton Breeze M vehicle successfully launched on Nov. 8, Arab Satellite Communications Organization's (Arabsat) BADR-4 satellite that will carry direct-to-home television services, together with voice and broadband services, across the Middle East, North Africa and parts of Europe.

The Proton launcher lifted off at 2:01 a.m. local time in Baikonur (3:01 p.m. Wednesday EST, 20:01 Nov. 8 GMT).

The BADR-4 satellite is a Eurostar E2000+ model equipped with a payload featuring 32 transponders in Ku-band. With a launch mass of 3,280 kg, it will be the 31st Eurostar to orbit.

Once in service, the Astrium-built BADR-4 will offer a wide range of satellite communications services with the highest power level and the widest coverage over the Arab countries. Co-located with the rest of the BADR constellation of satellites at Arabsat's 26° East longitude video neighborhood, BADR-4 will provide wider

choices and new possibilities to an audience of 130 million viewers enjoying more than 240 TV channels and 90 radio stations, as well as serving all of the 324 millions inhabitants covered from Morocco and Algeria to the Arabian Gulf. **SM**

DVB-S2

SATELLITE

Save up to 40%
on your space segment



New DVB-S2 Azimuth

modulator and demodulator series

Proven Efficiency

DVB-S2 reduces your satellite operating costs by up to 40% or saves on the size and power of your uplink and downlink equipment

Proven Flexibility

With more than 25 interface and processing modules to chose from, customize your Azimuth device according to your exact needs

Proven Interoperability

Newtec's DVB-S2 modulator has already been successfully tested with demodulators from 4 different vendors

Proven Scalability

Buy only the configuration and the performance you need and upgrade when necessary with a simple password. You can even start with DVB-S and upgrade to DVB-S2 later!

Proven Reliability

The Azimuth product line has years of track record, thousands of units delivered and a stellar reputation throughout the industry

QPSK, 8PSK, 16APSK and 32 APSK
55kbps to 68Mbauds
CCM, VCM and ACM



SHAPING THE FUTURE OF SATELLITE COMMUNICATIONS

WWW.NEWTEC.EU - SALES@NEWTEC.EU

SALES OFFICE IN: BELGIUM - USA - BRAZIL - DUBAI - SINGAPORE - CHINA - SOUTH AFRICA

EXECUTIVE MOVES

Boeing Appoints David Withers to Lead Boeing Australia; Nicole Piasecki Named President of Boeing Japan

ST. LOUIS – The Boeing Company has appointed David Withers as managing director of Boeing Australia Limited. Withers will move into his new role immediately, replacing David Gray, who has announced he will retire effective Dec. 31.

Withers will be responsible for leading what has become one of the leading aerospace companies in Australia, employing 2,200 people across 14 sites.

Withers joined Boeing earlier this year from Smiths Aerospace, where he was managing director of its Asia Pacific businesses. Prior to joining Smiths Aerospace, Withers worked for Qantas as a senior avionics engineer for the airline's 737 and A300 fleets. An instrument rated commercial pilot, Withers has an MBA from La Trobe University and a degree in engineering from the Royal Melbourne Institute of Technology. Withers succeeds Gray, who served as the managing director since 1995.

Boeing also named Nicole Piasecki vice president of Boeing International and president of Boeing Japan. Based in Tokyo, Piasecki will be responsible for developing and strengthening Boeing's presence and partnerships in Japan. She will report to Laurette Koellner, president, Boeing International.

Piasecki's appointment is effective in March 2007. She succeeds Robert "Skip" Orr, who has announced his retirement after leading Boeing's wide-ranging business activities in Japan for five years.

Piasecki, 44, joins Boeing International from Boeing Commercial Airplanes, where she was vice president of Business Strategy and Marketing. In this role, she was responsible for leading strategic business planning and marketing for the organization's products and services. Prior to this position, Piasecki served as vice president of Sales for leasing companies worldwide and director of Sales Operations. She also has sales experience working with Canadian carriers. Piasecki joined Boeing in 1991 as a customer engineer in the 777 Division.

Kent Rominger Joins ATK Launch Systems Group as Vice President Advanced Programs



Kent Rominger

SALT LAKE CITY — Alliant Techsystems has named Kent Rominger, former NASA chief of the Astronaut Corps, as vice president of ATK's Advanced Programs within the Launch Systems Group.

Ron Dittmore, president ATK Launch Systems, said Rominger's background and experience will be a valuable asset to ATK.

Rominger brings to ATK more than 20 years of experience working for NASA and the U.S. Navy in various leadership positions. He has logged over 7,000 flying hours in more than 35 types of aircraft, and conducted 685 carrier landings.

As an astronaut Rominger flew on five space shuttle flights, logging a total of more than 1,600 hours in space and twice served as a shuttle commander. In his most recent role as the chief of the Astronaut Corps at the Johnson Space Center in Houston, Texas, he managed the Astronaut Office in support of the Space Shuttle, International Space Station and Exploration Programs.

Rominger holds a bachelor of science degree in Civil Engineering from Colorado State University and a master of science degree in Aeronautical Engineering from the U.S. Naval Postgraduate School in Monterey, California.

Iridium Appoints John Campbell as Executive Vice President for Government Affairs

BETHESDA, Md. – Iridium Satellite LLC has appointed Lt. Gen. John Campbell, U.S. Air Force (Retired), as the company's executive vice president for Government Affairs. Iridium said Gen. Campbell fills a new and important role as the company accelerates its provision of products and services to the U.S. Department of Defense (DoD), the U.S. Department of Homeland Security and nearly 40 other government departments, bureaus and agencies.

EXECUTIVE MOVES

Matt Desch, chairman and CEO of Iridium, said having been an Iridium customer, Gen. Campbell can help anticipate the government's future needs, as well as today's role for the only truly global satellite communications network that reaches all corners of the earth.

Gen. Campbell joins Iridium from Applied Research Associates (ARA) of Alexandria, Va., where he served as principal, Defense and Intelligence, since 2004. Gen. Campbell joined ARA after retiring from the USAF after a 32-year career. In the USAF, Gen. Campbell served in a variety of operational and staff assignments around the world. In his last assignment, he served as the associate director of Central Intelligence for Military Support for the Central Intelligence Agency (CIA). In this position, he was the senior military representative at the CIA, serving as the military advisor to the director of Central Intelligence and as liaison



CALL ANY TIME.

We want to be your first call. That's why SES AMERICOM is building what we think you'll agree is the best 24x7 occasional broadcast service with our OCCASIONAL ALWAYS ON service.

With New Skies joining the SES family, we're now providing you with additional satellite bandwidth over the Atlantic, Pacific and Indian Oceans.

Our experienced staff will work with you 24x7 to solve your occasional needs for special events, breaking news, entertainment, sports and tele-

conferences. Our tradition of excellence, based on 30 years of industry leading service, assures we'll be here when you call.

OCCASIONAL ALWAYS ON delivers an expanded domestic and global network of distribution services: 120+ fixed and agile antennas spread among five major earth stations (two on the West Coast, two on the East Coast, and one in Europe). Add in the 9

New Skies mediaports in the U.S., Europe, Asia, and the Middle East, and you have access to any major market in any part of the world.

We also have multiple access and connectivity to the AVOC in Washington, 60 Hudson in NYC, and BT Tower in London.

SES AMERICOM is North America's leading trusted and reliable source for your satellite-delivered distribution needs.

Call any time for OCCASIONAL ALWAYS ON's complete teleport and satellite services: 800-243-1995 (U.S. only), or (1) 703-750-0010 (International). You can always book your time online, too: <http://stars.ses-americom.com>



SES AMERICOM
An SES GLOBAL Company

Copyright©2006 SES AMERICOM. All rights reserved. www.ses-americom.com

EXECUTIVE MOVES

between the CIA, the DoD and the Regional Combatant Commanders.

CapRock Appoints Bryan Olivier as Chief Operating Officer

HOUSTON— CapRock Communications has appointed Bryan Olivier as the company's chief operating officer. Olivier, a telecommunications industry veteran, moves into this role from his former position as the company's chief technology officer.

CapRock said Olivier's responsibilities in the COO role include consolidating operations, information technology, project management, engineering and supply chain management into a single global platform. This approach will permit the company to continue serving customers by enhancing its comprehensive communications solutions, which include seamless service, support and technology integration around the world. Responsibilities of the chief operating officer were previously held by Errol Olivier, who is retiring after nearly seventeen years of service with the company.

Previously, over an eight-year period in his career, Bryan Olivier held a number of positions of increasing responsibility at CapRock, including vice president of engineering and network construction, where he was responsible for the technology development and expansion of the company's network infrastructure. Bryan Olivier then went on to become CTO of Clearwire Technologies, a wireless broadband service provider, and later became COO of NovoLink Communications, a global VoIP telecommunications service provider, before returning to CapRock earlier this year as CTO.

Jim Halsell Joins ATK as Vice President and Program Manager of ARES I Upper Stage Team



Jim Halsell

HUNTSVILLE, Ala. — Alliant Techsystems has named James Halsell, former NASA Astronaut and space shuttle program launch integration manager, as vice president and program manager of the ATK-led ARES I Upper Stage team, based in Huntsville, Alabama.

In September, ATK Launch

Systems Group, Lockheed Martin and Pratt & Whitney Rocketdyne announced a teaming agreement to join forces in pursuit of NASA's ARES I Upper Stage procurement, planned for early 2007. Halsell's main responsibilities will be to lead the team's Joint Program Office for this effort.

Halsell's background includes more than 20 years of experience working with NASA in various leadership positions. His leadership roles included serving as Manager of Shuttle Launch Integration, leading NASA's Shuttle Return-to-Flight planning team, and most recently serving as Assistant Director for Aircraft and Flight Crew Operations. As an astronaut, Halsell flew on five Space Shuttle flights, two of which he served as pilot and three as the commander, logging over 1,250 hours in space.

Former NASA Astronaut Joins Andrews Team



Wendy Lawrence

SEATTLE, WA — Wendy Lawrence, former NASA Astronaut and retired Navy Captain, has joined Andrews Space, Inc. as a senior advisor for Human Spaceflight and Crew Safety.

Lawrence was selected as a NASA Astronaut in March 1992 and is a veteran of four Space Shuttle flights. She has logged over 1225 hours in space and has flown to Mir twice and the International Space Station once. During STS-114, the first shuttle flight after the Columbia accident, Lawrence was part of the crew that tested shuttle repair techniques and supplied the ISS with 11,000 pounds of cargo.

Lawrence will serve on Andrews' Senior Advisory Board as a Senior Advisor for Human Spaceflight, Crew Safety, and Safety and Mission Assurance. In addition, she will participate in the development of the Rocketplane Kistler (RpK) K-1 crew and cargo module development, which is being lead by Andrews.

DirecTV Creates In-House Advertising Sales Team

EL SEGUNDO — DirecTV, Inc. is streamlining its advertising sales division by bringing the entire operation in-house. As part of this new transition, DirecTV said it will combine its existing Advertising Sales team with a group of DirecTV account

EXECUTIVE MOVES

representatives from DirecTV's former ad sales vendor, Twentieth Television.

The newly combined DirecTV Advertising Sales team, operating out of DirecTV offices in Los Angeles, New York and Chicago, will be responsible for attracting new national advertisers to DirecTV while also working with internal DirecTV departments to create new partnerships and revenue sources.

Leading the group and responsible for annual gross ad sales revenues while serving at Twentieth Television, Bob Riordan, senior vice president of Advertising Sales, will be based in New York City and will report to Shanks.

Riordan's responsibilities include all aspects of advertising sales, including traditional media sales, advanced services applications, sports (NFL SUNDAY TICKET™, etc.), pricing,

planning and research (including the relationship with Nielsen Media Research). As the DirecTV account lead at Twentieth Television, Riordan will now manage the entire Ad Sales team.

Alison Pascola, vice president of Ad Sales, will report to Riordan and focus on ad sales marketing and research – shifting from her current role at DirecTV while continuing as the internal point of contact for employees in Los Angeles. Pascola and her team will also be responsible for developing and presenting ad sales promotional opportunities directly to clients and their advertising agencies.

Joining DirecTV from Twentieth Television and also reporting to Riordan are: Rich Forester, vice president, New Business Development, based in New York; Jamie Calandruccio, vice president, Planning and Operations, based in New York; Steve Fish, vice president, Mid-West Region, based in Chicago; and

Satellite Communication Solutions...

At Your Fingertips!

MITEQ

100 Davids Drive, Hauppauge, NY 11788 • TEL: (631) 436-7400 • FAX: (631) 436-7430 • www.miteq.com

EXECUTIVE MOVES

JC Kawalec, vice president, Western Region, based in Los Angeles.

DataPath Names David J. Helfgott President and Chief Operating Officer

DULUTH, Ga. — DataPath, Inc. has appointed David J. Helfgott to the newly-created position of president and chief operating officer, effective Nov. 15, 2006.

Helfgott, a 20-year industry veteran, was formerly president and chief executive officer of Americom Government Services, Inc., a wholly-owned subsidiary of SES Global, S.A., that serves the U.S. government in the areas of civilian and defense broadband communications. Helfgott will report to DataPath CEO Andy Mullins. He will have responsibility for helping to create the company's strategic direction and implementing its operational programs.

"David's arrival coincides with an exciting period for our company as we execute our federal market strategy," said Mullins. "His expertise in developing, marketing and delivering satellite communications to satisfy government requirements will be invaluable as we continue to leverage prime-contracting opportunities on key programs such as the Worldwide Satellite Systems Program."

In 2000, Helfgott joined SES Americom, Inc. as senior vice president of Marketing. In this role, he led the team responsible for domestic and international marketing strategy, programs and processes. In 2001, he was named to lead a newly formed subsidiary of SES Global, S.A., called Americom Government Services, Inc. As president and CEO, he was responsible for setting the organization's long-term business vision, expanding its product line, establishing its brand in the marketplace and running its overall operations. His background also includes extensive senior-management experience in sales, marketing and business development for companies such as eFusion, Bell Atlantic Internet Solutions and MCI Telecommunications.

Tandberg Television Hires Robin Main as Sr. Vice President of Application Software Development

ATLANTA — Tandberg Television has appointed Robin Main as senior vice president of application software development. A leader with 20 years of experience in developing high value solutions for service provider networks, Main will lead the

research and development of software technologies for Tandberg Television's global customer base.

Main joins Tandberg Television from Movaz Networks where he served as senior vice president of engineering. In this role, he oversaw a 200-person research and development team focused on hardware and software development and systems verification. Prior to his tenure at Movaz Networks, Main was vice president of software engineering at Scientific-Atlanta for more than five years where he was responsible for software, firmware and system verification for all major cable components.

GeoEye Appoints Retired USAF Lieutenant General James R. Clapper to Board of Directors

DULLES, Va. — GeoEye (Nasdaq: GEOY) has appointed retired Air Force Lieutenant General James R. Clapper, Jr. to its board of directors. Lt. Gen. Clapper was the first civilian director of the National Geospatial-Intelligence Agency (NGA).

Matthew O'Connell, GeoEye's chief executive officer, president and director, said Clapper took over NGA just two days after 9/11 and spearheaded its rapid change into a powerhouse of geospatial intelligence. "His strategic thinking will be invaluable as we address the rapidly increasing global demand for geospatial information," he said.

Highlights of Lt. Gen. Clapper's military career include serving as the director of the Defense Intelligence Agency, in addition to a variety of intelligence-related positions including assistant chief of staff, Intelligence and Headquarters USAF, during Operations Desert Shield/Desert Storm. He also served as director of Intelligence for three war-fighting commands: United States Forces, Korea; Pacific Command; and Strategic Air Command.

He retired as a lieutenant general from the United States Air Force in 1995 after a 32-year career. Prior to his appointment as director of the National Imagery and Mapping Agency in September 2001 (later renamed NGA), he worked in the industry for six years in three successive professional services companies focusing on intelligence clients. He is now the senior vice president and chief operating officer of DFI International Government Services and a professor of Military Intelligence at Georgetown University in Washington, D.C. **SM**

NEW PRODUCTS

Aeronautical Multi-channel Iridium Satcom System from ICG Provides Suite of Global Voice and Data Service

NEWPORT NEWS, Va.— International Communications Group (ICG) has introduced the new ICS-400 Iridium Communications System designed to provide a standalone comprehensive suite of global voice and data services with connectivity to other aircraft systems.

The ICS-400 incorporates four Iridium transceivers and an internal cabin telecommunications unit (CTU). It provides the full range of CTU functions, including intercom calling, call transfer, conferencing, follow-on dialing and voice prompts, using standard dialing conventions and familiar call-progress tones. It also includes ARINC-429 connections and a dedicated short-burst data (SBD) modem for ACARS/AFIS services, and a built-in GPS to support automatic flight following (AFF).

The ICS-400 is an ideal solution for aircraft requiring no more than eight telephony connections and seamless global connectivity with no hand-offs or areas without coverage, said Armin Jabs, president of ICG.

The system can be connected to conventional telephony devices or legacy CTU systems through standard 2-Wire tip and ring circuits, 4-Wire audio connections or digital CEPT-E1 circuits. It can be interfaced with installed MagnaStar systems to permit Iridium calls through Mach-1 handsets.

Astrium Satellites Selects UGS Tecnomatix for Electronic Product 'Birth Certificate'

PLANO, Texas, and LONDON— Astrium Satellites has selected UGS Corp.'s Tecnomatix software, a digital manufacturing solution to improve time-to-market and product auditing functions. UGS said Astrium signed the contract with the company following a three-way competition against rival industry solutions.

Astrium will use Tecnomatix Manufacturing Execution System (MES), a tracking and production management system, in its Portsmouth, U.K., cleanroom to streamline its production processes. Using the new UGS(R) solution, Astrium will replace paper-based reporting tools with electronic reporting tools to help reduce the risk of human error in its electronic equipment

development.

"The ability to electronically track the assembly process, which must be monitored and recorded at every stage, will provide managers ready access to information about work-in-progress and quality. Electronic tracking also enables managers to ensure that the right amount of time is being spent on each process stage. Our technology demands a 'right first time' approach," said Jonathan Roe, manufacturing engineer at Astrium Satellites.

FAA Uses NovAtel Inc. Receivers to Test Modernized GPS Signals

CALGARY, Alberta, Canada— NovAtel Inc. a precise positioning technology company, has announced that the Federal Aviation Administration (FAA) successfully used NovAtel receivers in testing of the global positioning system IIF (GPS Block IIF) satellite, tracking both L5 and L2C signals.

The GPS Block IIF is an upgrade of the original GPS. NovAtel said receivers used the EuroPak-15a configurable, 16 channel GPS L1/L5 receiver, and the ProPak-V3 dual frequency L1/L2 receiver.

The US Air Force is directing and procuring improvements to the existing GPS constellation, introducing new technologies and capabilities to create a modernized satellite system.

NovAtel said the EuroPak-15a receiver may be user configured to track not only the basic GPS L1 signal, but also GPS L5 and L5 SBAS (Space Based Augmentation System – such as the US WAAS) signals. It can also be configured to track both GPS and Galileo L1 and E5a signals.

New Satlink Software from STM Reduces Network Operating Expenses

IRVINE, Calif.— As part of its ongoing effort to add new features and enhancements to the Satlink DVB-RCS product line, STM has deployed its latest Satlink System Software Release-11 across several networks. STM said the new software release includes embedded Header Compression for further improvement in bandwidth efficiency, particularly for networks with extensive use of VOIP and all types of UDP traffic.

"One of our goals is to continually reduce the OPEX for our network operators," said Bjørn Platou, general manager of STM Norway. "Our latest Software Release lowers the network

NEW PRODUCTS

operating costs by increasing the amount of actual information carried within the satellite bandwidth.”

STM's VSAT product portfolio, including the Solante product line, is known for providing voice quality with low system delay. STM said the new implementation of the Header Compression in the Satlink System Software Release-11 carries the same commitment to quality performance by incorporating a unique implementation to minimize additive delay resulting from improved bandwidth efficiency.

New Iraqi Bouquet Joins Arabsat's Badr Constellation at 26° East

RIYADH, Saudi Arabia

— Middle East satellite operator Arabsat has announced the airing of 11 TV channels Iraqi Bouquet on the Badr-3 satellite of the Arabsat fleet.

Arabsat said the digital distribution platform in Ku-band will allow the Iraqi Bouquet to directly access Arabsat's extensive Middle Eastern and North African audience of 130 million



GLOBAL LINK

Productions Inc.

Live News, Sports & Teleconferencing

EQUIPMENT

GLOBAL LINK Productions, Inc. offers state of the art equipment in our 7 Rack fully redundant Uplink/Production trucks. Each truck is Dual path, Dual Polarity.

TRUCK #1

2 Digital Paths, 2 Analog Paths, 2.4 Meter, 4 port feed, Dual 300watt Phase-combined TWTAs

Beta SP Edit suite, GVG-110 Production switcher, Dual IFB, PL systems, 4 cell phones, Satellite phone, Quad video splitter, 20 Channel audio mixer, High Speed (2-Way) Satellite Internet, DSS return system, Kohler 20KW generator.

TRUCK #2

4 Digital paths, 2 Analog paths, 2.4 Meter, 4 port feed, Dual 300watt Phase-combined TWTAs

Beta SP Edit suite, Additional Beta SP recorder, GVG-110 Production switcher, 20 X 20 A/V Router, Dual IFB, PL systems, 4 cell phones, Satellite phone, Quad video splitter, 16 Channel audio mixer, High Speed (2-Way) Satellite Internet, DSS return system, Kohler 20KW generator.

FLY-AWAY #1

2 Digital Paths, 1.8 Meter, 4 port feed, Dual 100 watt TWTAs. Dual channel PL and IFB systems, Audio mixer, 10 X 1 router.

PERSONNEL

Our professional crews are ready and willing to assist you with your next event domestically or Internationally. Our camera crews have all the gear needed to make that shot look and feel just right!

Call now for your next Booking:
800-676-4080

1175 Saratoga Ave., Suite 1
San Jose, CA 95129 U.S.A.
Tel.: (408) 465-2787/ Fax: (408) 465-2345
 • **Web: www.globalinktv.com**
 • **Email: info@globalinktv.com**

NEW PRODUCTS

viewers via its constellation of 4 Badr satellites at 26°East. The new bouquet includes: Al-Blad, Ashour, Al-Dyar, Nahrain, Rafedain, Al-Bagdadia, Ashtar, Al-Masar, Al-Salam, Turkomania, Kordistan.

Thrane & Thrane to Provide Commercial Fishermen with National Marine Fisheries Service

VIRGINIA BEACH, Va. — Thrane & Thrane, Inc. can now offer commercial fishermen National Marine Fisheries Service (NMFS) approved Enhanced Vessel Monitoring Systems (EVMS) with a \$3,095.00 instant rebate off the \$3,595 manufacturer's suggested retail price.

The company said more than 1,000 commercial reef fishermen in the Gulf Coast between Key West, Fla., and Texas have until Dec. 7, 2006, to deploy EVMS units as a result of a National Oceanographic and Atmospheric Administration (NOAA) regulatory mandate. Thrane & Thrane, Inc. is now able to offer the EVMS systems because NMFS is providing a \$3,095 VMS rebate.

Through Nov. 30, 2006, Thrane & Thrane said it will pay for the least cost shipping option for such units.

The Thrane & Thrane SAILOR VMS Gold Package operates on a 10Vdc to 32Vdc floating power supply and includes the SAILOR TT-3026D with VMS Message Terminal, including the Microsoft Windows XP operating system, a marine grade PC and monitor, easyEmail that supports VMS catch reporting and declaration documents exchange.

The SAILOR TT-3026D is an approved Global Maritime Distress and Safety System (GMDSS) following the same protocols as large ocean going vessels required to have GMDSS Sat-C systems. This means that if a fisherman pushes the distress button on the EVMS, the distress alarm goes to the nearest Maritime Rescue Coordination Center (MRCC) — in U.S. waters this would be the United States Coast Guard. Every vessel and ship having a Navtex, Sat-C, GMDSS, or mini-C will also receive the distress message to assist if nearby — a distress message that comes in a form of an alert giving the vessels name, time stamp, and position.

Globalstar Debuts World's Smallest, Lightest Handset for Use on a Global Satellite Network



Globalstar's smallest and lightest handset, the GSP-1700, for use on its global satellite network of more than 120 countries and six continents around the world.

MILPITAS, Calif. — Globalstar, Inc. has introduced its next generation satellite telephone handset, the new GSP-1700 mobile satellite telephone that operates on the Globalstar satellite network of more than 120 countries and six continents around the world.

Globalstar said the new handset sets a

benchmark for satellite telephones capable of global satellite use, incorporating Globalstar hardware features into a product offering significantly reduced size and weight when compared to other global satellite handsets. The GSP-1700 is being manufactured by QUALCOMM and incorporates its Mobile Station Modem(TM) (MSM(TM)) MSM6500(TM) chipset solution for EV-DO networks.

Weighing approximately 7.1 ounces (203 grams), GSP-1700 telephone is nearly half the weight of the company's current satellite handset and close to 45 percent smaller (by volume). The new lithium-ion battery is designed to provide users with four hours of talk time and 36 hours of standby time. The GSP-1700's lightweight ergonomic design embodies the ruggedness of the current Globalstar phone while integrating convenience-oriented features such as a new five-mode color display and portable headset capability.

The phone supports six operating languages and is available in three vibrant faceplate colors, using durable high-luster or metallic finishes.

International Communications Group Unveils Deployable Network for Emergency Response and Restoration

NEWPORT NEWS, Va. — International Communications

NEW PRODUCTS

Group (ICG), a leading supplier of Iridium satellite systems for government and commercial markets, has introduced a new emergency-response Deployable Communications Network (DCN).

The DCN is designed to provide a rapidly deployable command post with four Iridium voice or data satellite channels tied into an integrated private branch exchange (PBX), with optional hookups for connecting into GSM phones and Inmarsat high-speed data (HSD) satcom channels. The system provides multiple-link management and can support multiple workstations inside the communication center.

When used with the GSM phone option, the system provides a local-area virtual cell site. The handheld GSM phones can be used within a several-mile radius of the DCN center, connecting through the PBX into the Iridium back-haul lines for communication with the outside world.

The HSD option uses Inmarsat Swift 64 service, offering a 64 kbps data channel, plus an additional voice circuit, cross-distributed and shared among all of the operator positions. The DCN is also compatible with Inmarsat's new BGAN broadband service, when greater bandwidth is required by the customer.

Larkin noted that the system can also support secure wireline terminals for NSA Type 1 secure voice and data up to 10 kbps per channel.

Worldspace Launches India's First National 24-Hour Marathi Radio Station

SILVER SPRING, Md. — Worldspace Satellite Radio has launched "Surabhi," India's first ever 24-hour Marathi radio channel.

The latest addition to the Worldspace-branded channel repertoire salutes the Maratha culture and pays tribute to one of the richest languages in India. "Surabhi," Channel No. 110 on the Worldspace Satellite Radio Network, offers listeners a broad spectrum of Marathi music, culture and literature in a magazine format that brings to life the diversity and heritage of Maharashtra.

"These dedicated 24-hour channels such as 'Surabhi' help connect people away from home with the music and tradition

of their people," said William Sabatini, vice president, global programming of Worldspace.

"Surabhi" captures the cultural ethos of the legendary Maratha tradition and the interests of Maharashtrians in poetry, literature and theatre. The channel recognizes the various aspects of Marathi music and will have special shows for Bhaavgeet (songs with 'bhaav' - emotions), Abhangas (devotional songs), Powadas (patriotic songs).

Natyasangeet (songs used in plays), Lavani and Lokgeet (folk songs) among several others exciting sub-genres. **SM**

NARDA SATELLITE NETWORKS
THE VIDEO SOLUTION FOR FLYAWAY AND DSNG APPLICATIONS
DVB-S2 READY

L BAND UP CONVERTERS

- L Band to C or Ku Band
- Multiple Converters in 1U Rack

V2200 DUAL CONVERTERS

- 70 or 140 MHz IF
- Dual Channel in Single 1RU Package

DSNG ENCODERS

- Combines Encoding, Modulation & Up-conversion in Single 1U Rack

IRDs

- Professional MPEG-2 DAB and ATSC Integrated Receiver Decoder

narda
satellite networks

an L3 communications company

435 Moreland Road, Hauppauge, NY 11788
Tel: 631.231.1700 • Int'l Tel: 631.231.1390
Fax: 631.231.1711
www.nardamicrowave.com

COVER STORY

Top Stories of 2006

by Virgil Labrador
Managing Editor, SatMagazine

2006 will be remembered as another year of significant developments for the satellite industry. The consolidation that has characterized the last few years continued in 2006 with the regulatory approvals of the Intelsat and PanAmSat merger and the United Launch Alliance formed by Boeing and Lockheed Martin. In all likelihood, this process of consolidation will continue through 2007 and the industry should emerge from it leaner and much more suited to face the challenges and opportunities ahead.

Here's a recap of the Top Stories of 2006:

US Regulatory Authorities Approve Intelsat-PanAmSat Merger while SES Global Merges with New Skies Satellite

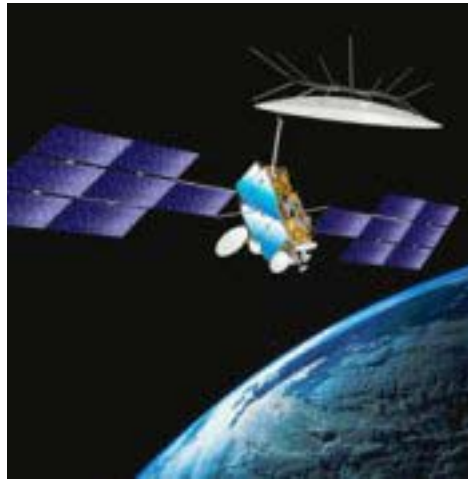
The merger of the two top satellite operators, Intelsat and PanAmSat which was first announced in 2005, was finally consummated and approved by the US regulatory agencies in 2006. This made the new Intelsat officially the largest satellite operator in the world with 51 satellites. With the merger with PanAmSat, Intelsat overtook Luxembourg-based SES Global as the largest satellite operator in the world. SES Global, which will start to call itself just SES in 2007, however, is not taking this sitting down. SES is the only major satellite operator which has resisted takeover by Private Equity Investors as with PanAmSat and Intelsat, but is also looking to make major acquisitions of its own. It purchased Intelsat spin-off New Skies Satellites in 2006 and forged a partnership with archrival Eutelsat (more on this later). It will be very interesting to see how the consolidation among the satellite operators pan out in 2007.

Connexion by Boeing Calls it Quits

The highly-touted Connexion by Boeing service which provided inflight broadband internet service called it quits in the third

quarter of 2006. Boeing is not saying how much it lost in the venture, but it can be safely surmised that it is a significant amount estimated in the Billions. Once considered a hot application, inflight satellite services was just ahead of its time.

There just wasn't enough users to justify the high investment cost of the service. Boeing is trying to sell the service but there seems to be no takers. If it manages to find a buyer, it would certainly have to settle for pennies on the dollar, and maybe, the inflight service model might be just be resuscitated a la Iridium and Globalstar in the future.



Based on the Alcatel Alenia Space Spacebus 4000C4 platform, W2A will have up to 46 transponders in Ku-band and a C-band payload of 10 transponders. Designed with a lifetime of more than 15 years, W2A will have a maximum launch mass of 5.7 tons and will deliver 11 kW of payload power. (Eutelsat photo)

SES and Eutelsat Partner to Serve Markets for Mobile Broadcasting and other Communications Services in Europe

Europe-based satellite operators SES Global and Eutelsat announced in October 2006 a joint investment in the first European satellite infrastructure for broadcasting video, radio and data to mobile devices and vehicle receivers.

SES and Eutelsat said they have agreed to join forces in a 50/50 joint venture company, which will operate and commercialize the S-band payload on W2A. The company will be set up by SES Astra and Eutelsat following

approval from relevant regulatory agencies. The S-band space segment represents an investment of approximately \$165.19 million (130 million euros). The S-band (2.0 and 2.2 GHz), which represents a new frequency band for both SES and Eutelsat, provides a set of frequencies optimised for supporting a wireless distribution network for delivering video and other services to mobile devices, including phones, PDAs, laptops and vehicle receivers.

Federal Trade Commission Clears United Launch Alliance Joint Rocket Venture

The United Launch Alliance (ULA) formed in 2005 between US launch providers Boeing and Lockheed Martin received

COVER STORY

regulatory approval this year. ULA would combine the production, engineering, test and launch operations associated with U.S. government launches of Boeing Delta and Lockheed Martin Atlas rockets. ULA would present a formidable competitor in the crowded launch services market dominated by the European launch service provider, Arianespace. The alliance might lead to more consolidation in the launch services market.

101 Nations Agree to Switch to Digital Broadcasting by 2015

Falling under the radar screen but probably not coming as surprise to anyone is the signing in June 2006 by delegates from 101 nations in Europe, Africa, and the Middle East of a treaty at the conclusion of International Telecommunications Union's Regional Radiocommunication Conference (RRC-06) in Geneva heralding the development of 'all-digital' terrestrial broadcast services for radio and television.

The treaty that will replace traditional radio and TV broadcasts with a standard digital system by 2015 represents a major landmark towards establishing a more equitable, just and people-centered Information Society, observers say. The digital switchover will leapfrog existing technologies to connect the unconnected in underserved and remote communities and close the digital divide. But more significantly, the implementation of bandwidth-hungry digital broadcasting technology across the board globally will stimulate demand for satellite services and ensure growth in the near-term.

NASA to Invest \$500-M in Private Sector Space Flight with SpaceX, Rocketplane-Kistler

NASA announced in 2006 that it is investing \$ 500 million to develop private sector initiatives in space transportation. One of the recipients of the grant are satellite companies SpaceX and Orbital Sciences Corporation. I have always maintained that the development of private sector initiatives in space such as commercial space flight will have some spillover effect on the satellite industry. The development of commercial space flight will drive demand for space related equipment and services and will provide yet another market for satellite companies.

Broadband Services Taking Off

Consumer broadband satellite services WildBlue in the US and iPSTAR in Asia, both launched in 2005, are both showing steady growth in 2006. New broadband services are also in the offing in Europe with the aforementioned SES Global and Eutelsat joint-venture and a new service planned by a consortium formed by Intelsat, Telespazio and Hughes Europe. The success of these ventures will most likely lead to other ventures and herald the much touted broadband takeoff which will definitely spur demand for satellite services and products.



Boeing's Delta II launch vehicle, successfully delivers to orbit a replenishment Block IIR Global Positioning System (GPS) satellite for the U.S. Air Force. (Boeing photo)

Asia is Back

If the numbers at CommunicAsia and other trade shows in Asia this year are any indicators, it would appear that the Asian market is really primed for takeoff this year. Asia, long bandied as the largest potential satellite market is finally living up to the promise. A growing middle class and stable governments have pushed demand for consumer broadband and satellite services. The success of broadband internet service iPSTAR and the opening up of the huge Chinese and Indian

markets makes Asia one of the top emerging markets for satellite services and products.

Conclusion

There certainly were a lot more good news than bad news in the satellite industry in 2006. With promises of high demand for satellite services and new emerging applications and markets, the future does look bright for the industry as a whole.

SM



Virgil Labrador is Managing Editor of SatMagazine and is responsible for all editorial activities of Satnews Publishers worldwide. He is co-author of the book, *Heavens Filled With Commerce: A Brief History of the Commercial Satellite Industry*. He can be reached at: virgil@satnews.com

TECHNOLOGY UPDATE

Satellites and WiFi

by **Bernardo Schneiderman**

Satellite IP is now a standard in the majority of applications in the Corporate, Government and Service Providers in the global market. Now with the expansion of the WiFi products starting with Laptops and Desktop and other devices like WiFi Phones, PDA devices already with built-in WiFi capability it is becoming a major trend in the market to provide Satellite IP access in wireless format.

WiFi is becoming popular both in Enterprise, Government and Consumer applications worldwide and is helping to bridge the global digital divide in some of key projects in the third world countries.

WiFi and Satellites have been instrumental in bringing Internet to users located in areas where broadband infrastructure cannot reach (Cable and Fiber). For many, however, the equipment and connection costs of such a service have been prohibitive, particularly when weighed against the typical individual user's modest Internet needs.

The combination of WiFi and satellite provides an economical shared service among users of remote communities and villages; the satellite connection brings the Internet to the villages, the WiFi access point extends that connectivity to the home, school, and public areas.

WiFi and satellite also can be used to provide quick, temporary Internet connectivity, which is useful in the case of special events, emergency missions, and mobile operations. By adding a WiFi

access point, a Satellite News Gathering (SNG) truck, for example, can provide wireless Internet connectivity to reporters' laptops and PDAs within a specified radius to transmit and send IP Video and Video Streaming.

In the diagram below we see a example of application of WIFI integrate with satellite for one area coverage:

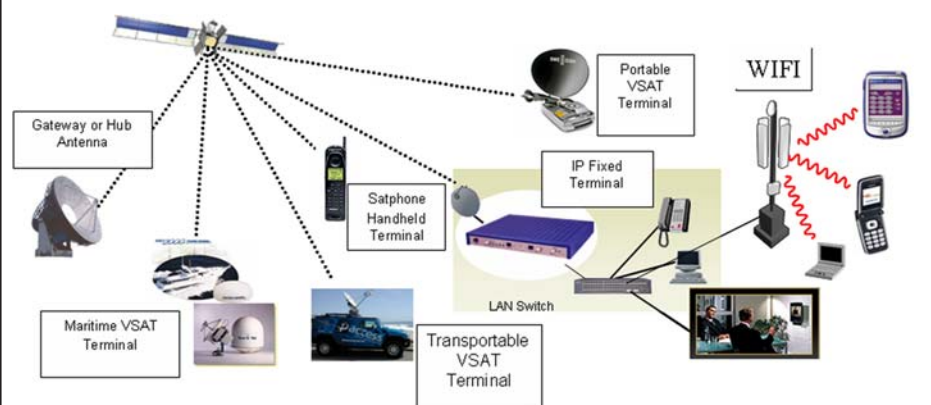
Smart City-wide WiFi Solution

The design of the city-wide wireless broadband network to support real-time multimedia



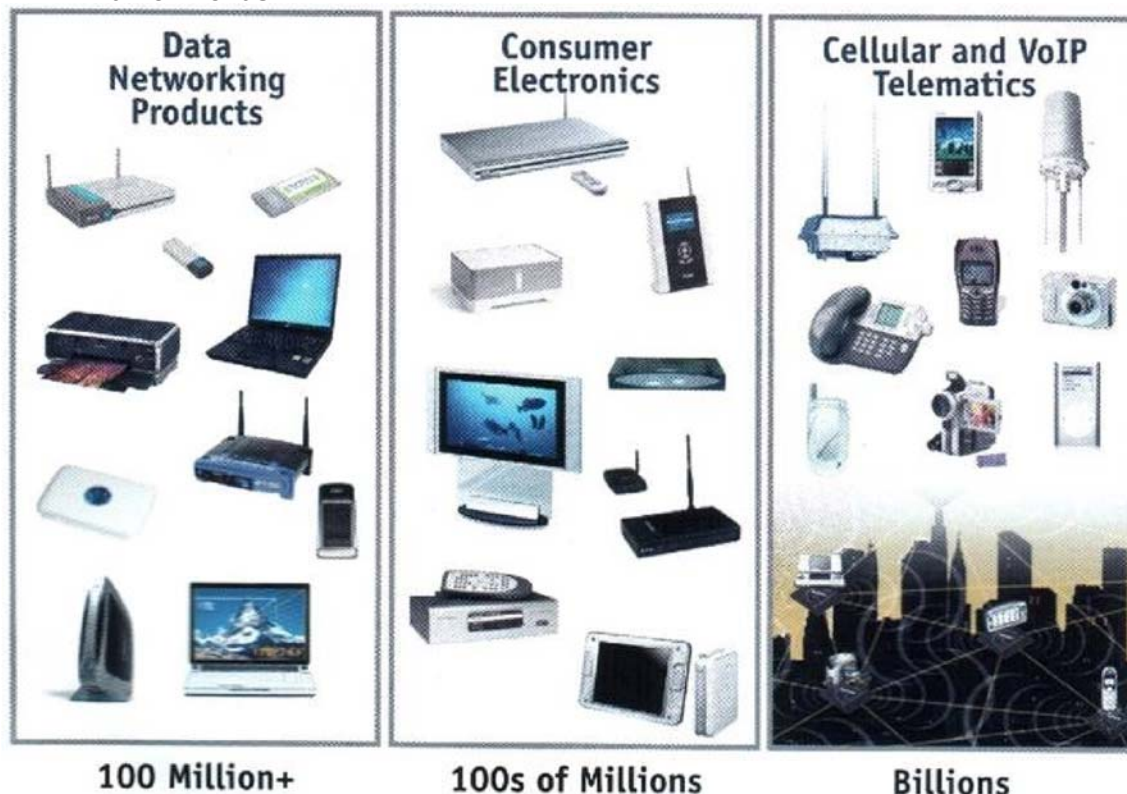
Getting the Wireless & Satellite Solution

Satellite & Wireless can provide narrowband and broadband IP communications (Internet, data, video, or voice over IP)



TECHNOLOGY UPDATE

WIFI Market Trends



applications such as voice, streaming video, network gaming and Internet surfing for both static and mobile users is another main trends in the Global Village in Metropolitan and Remote Areas.

The WiFi penetration in client devices is commonly found in notebook computers, PDAs, and mobile phones. It can deliver true broadband connectivity in 802.11g standard by providing data rate up to 54Mbps.

The primary purpose of WiFi is for WLAN coverage with a typical line-of-sight radius of 100m which implies large number of WiFi access points is required for large area coverage. In urban or dense populated area, the WiFi coverage is spotty due to the low penetration power of WiFi signal so it is hard to achieve ubiquitous coverage. Moreover, WiFi is conventionally used to support

data applications for static users, it can be challenging if it is used to support multimedia applications in moving speed with the presence of delay-sensitive traffic, in particular the packet latency can vary largely in the air interface.

One key development in the WiFi market was the launch in the market during 2006 by ALTAI Technologies. The cellular architecture developed by ALTAI Technologies system is similar to a 3-layer cellular network. The Pico base station is used to increase the system capacity in a densely populated area.

The A8 WiFi Cellular smart base

station provides large area coverage (up to 1 Km in open areas or up to 500 meter in major urban cities) with wireless backhaul connecting back to the hub site where the A0 wireless bridge is used for point-to-point or point-to-multipoint connection. And all the network elements are managed by Wireless Management System (AWMS).

With the WiFi efficient technology developed by companies like ALTAI the integration with satellite IP will bring new applications in the market for global application of wireless solutions. **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



FEATURES

CEOs' View the Year that Was and Prospects for 2007

There is probably no better informed group of people in the industry than the CEOs of leading satellite companies. For the third time since we started publication in 2003, we conducted our annual survey of the chief executives of major satellite companies and gathered their views on the year that was and the prospects and opportunities in the coming year. This year, we received a good response from almost every sector of the industry from the operators, service providers and equipment manufacturers. The result is a comprehensive and optimistic picture of the industry in 2007.



John Celli,

President, Space Systems/Loral

2005 was a good solid year for the satellite industry and 2006 was a year of robust growth. We are seeing a substantial replacement market as well as growth in both broadcast television and radio services. Mobile Satellite Services (MSS) and Digital Multimedia Broadcasting (DMB) are taking off

and the market is also stimulated by increased demand for satellite broadband and high-definition television. The industry in general can be very proud of the increases in reliability in both satellites and launch vehicles.

Space Systems/Loral reported significant growth in 2006 and we have been very effective in increasing resources, through adding engineering and technical talent to our highly experienced and successful teams. Our customers tell us that the best thing about working with SS/L is the people and that we are always extremely responsive to their needs from the proposal stage throughout the life of the satellite. In 2006 we have continued to build on our customer focused culture through performance, schedule integrity and providing unquestionable reliability for our satellites that often exceed their contractual life.

We see continued market growth in 2007. I think that meeting the growing worldwide demand for new satellites will

be the biggest challenge across the industry.

We see satellite operators demanding more powerful satellites in order to meet their business objectives. There is also a trend toward more flexibility in satellite design. Space Systems/Loral has a track record of already providing satellites that work in multiple orbital slots and offer both broadcast and spot-beam payloads on the same platform. We regularly provide satellites with the capacity to switch between geographic areas and frequencies. Our ability to address new and changing requirements is always coupled with the reliability of our heritage designs and a practical, cost-effective approach.

Satellite technology is broadening the world's ability to communicate. The impact of globalization means that there is a demand for all kinds of advanced services in regions with very little existing infrastructure. Satellite delivered telephone and Internet services are providing cost effective ways for these regions to meet the growing demands of the global economy.

Christian Pinon,

CEO, GlobeCast

I feel that market conditions in the satellite industry have slightly improved since 2005, although the basics for capacity demand remain the same. On one hand the satellite industry has experienced regular growth in TV distribution, but on the other, there has been a decrease in the number of telecommunications related services. On the supply side, the consolidation of major satellite operators, fleet optimization and a decrease in investment have led to a more balanced situation, which in turn has

FEATURES



contributed to some price stabilization. This is good news, especially for a content management and delivery company like GlobeCast.

Price stagnation, which has been the most significant trend, is proof that satellite supply now better reflects the global demand. For the big satellite operators, this trend confirms the need to restore profitability and to favor the creation of an efficient asset management policy rather than making more risky "service" investments. The floor is more open now than ever before for service providers like

GlobeCast, which are able to operate mixed networks of global fiber rings and satellite uplinks, and develop IP initiatives and related services - packages increasingly sought by broadcasters.

GlobeCast strengthened its strategy in 2006, becoming more and more global (present on all the continents, commercially and technically), more and more interconnected via fiber (from Asia to Europe through to the US) and more and more service oriented. We have the right fit because we've realized that while transportation is a pure commodity, bringing value to the customer beyond transportation pays back. In our field of broadcast transportation, providing upstream services (capturing, aggregating, encoding and encrypting the TV signal) or downstream services (storing, playing, displaying), are vital "add-ons" helping to secure the customer and protect the central transportation service. Innovative services, like contribution over IP which is incidentally more complementary than alternative to classical satellite contribution, can also generate recurrent high margins once the one-shot developments are completed.

I am quite confident about the satellite industry in 2007 and do not anticipate any major disturbances. Satellite operators will go on consolidating their fleets, which is not a big concern for us, fiber carriers will continue to dedicate time and resources to the IP boom and GlobeCast, as the only global "TV carrier" (network integrator and service innovator), will go on growing in a profitable way to better bring value to its customers.

Mark Dankberg,
CEO, VIASAT



Overall, there was probably continued improvement for the industry – though not dramatic. The completion of the Intelsat-PanAmSat merger may finally represent the peak of the private equity led consolidation. For us, the continued success of Wildblue communications Ka band broadband service was a major positive. It was very noteworthy that both Echostar and DirecTV, executed exclusive distribution agreements with Wildblue, despite having unsatisfactory experiences with other Ku band broadband services.

**The FlyAway You
Can Drive Away**

**Fly&DriveTM
Antennas**

from **AVL TECHNOLOGIES**



AS VERSATILE AS IT GETS:

- Available in SNG or Mobile VSAT
- Palletized for vehicle or ground mount
- Fully automatic and motorized with handcranks
- Configures with any RF or modem
- Carbon-fiber or standard antennas
- Packaged in air-freightable containers
- Jog or auto-acquisition controllers with world-wide software



featuring the
**Rugged Roto-Lok[®]
Cable Drive**

AVL TECHNOLOGIES
designs for ultimate performance

www.avltech.com

FEATURES

We celebrated our 20th anniversary with our best year ever. We also achieved our best ever financial results, with 25% growth in revenue to \$434 million, a 22% growth in net earnings, and record new orders of \$440 million. We were especially pleased by growth in Ka-band broadband, and our entry into the Mobile Satellite Services sector with a contract from Boeing to develop the Ground Based Beam Forming system for Mobile Satellite Ventures (MSV).

We anticipate another record year for ViaSat in 2007. We anticipate continued strong adoption of Ka band broadband services, with new advanced Ka band satellite program announcements likely. We also are optimistic about new applications in the MSS bands. The biggest challenge for the industry, in general, is to continue to innovate in both ground & space systems to keep pace with alternative terrestrial technologies.

We perceive awakening recognition of the value of broadband spot beam satellites for data services – which could lead to changes in the way satellites are designed and used in the future. The concept of reconfigurable satellites, with the ground based beam forming MSS initiatives as a leading example, can also have a big impact on satellite design and deployment in the future.



Matt Desch ,

Chairman and CEO , Iridium Satellite

The evolution of services and devices that the satellite industry has launched just in the past year alone astounds me. Whole new industries that didn't traditionally tap satellite-based services in the past opened up for us in 2006. For example, in the past year, the Machine-to-Machine (M2M)

industry has really taken notice of Iridium's evolution from a handheld voice service to a full suite of voice and data solutions. This unprecedented demand for our services in the M2M arena has truly impressed upon me our opportunity to enter even more new markets as the world's most robust, pervasive and fully-integrated global communications network. We will unleash our full potential, and it can only be good for the industry that new markets will afford other satellite service providers to do the same.

It's been a major growth story for Iridium Satellite over the past few years, and we see nothing but the same going forward. As shown by our recent Q3 results released in November

2006, we experienced significant growth with 169,000+ subscribers (2,000 - 3,000 new subscribers per month). Commercial revenue now represents approximately 70 percent of total revenue and the commercial subscriber base is four times the size of defense. Third quarter revenue was \$54.7 million and EBITDA was \$14.0 million. Additional 2006 numbers include a data traffic increase of 44 percent over Q3 2005; aviation subscribers grew 66 percent over mid-year 2005; and maritime subscribers grew 54 percent over mid-year 2005.

Iridium Satellite, like some other players in the industry, is solidifying our plans for new services we will provide in 2007 and beyond. Independent studies indicate that Iridium can expect full operations of our network into the next decade. Though that may seem years away, we must act now to ensure a smooth transition to this next phase. This will be a major focus of ours in 2007. Internally we have started a corporate initiative - what we call "INX" (or "Iridium Next Generation Network") - to bring together leading minds inside *and* outside our industry to plan for the launch of our next generation constellation. We must build a new Iridium constellation that will be flexible, be cost effective and enable new services. It needs to maintain the security and global coverage that Iridium customers count on, while increasing the bandwidth available to the users and supporting powerful devices. At the same time, we have embarked on enhancing our current constellation in ways we never thought possible, to offer higher speed services, as well as new opportunities for data services and embedded systems.

Certainly the last year brought to fruition that customers are tasking our industry to serve up *convergent communications* - the delivery of voice, data and video services over high speed networks. Iridium must shift with the industry and has an important role to play in this arena, not just through INX but with the enhancements to our existing constellation currently underway. The opportunities are limited only by our imagination. Combining the lessons learned from running the world's most global mobile satellite network, and working with the best and brightest Iridium employees and partners engaged in INX, we're confident about the future. Our partners are already telling us that by developing INX as an IP-based constellation, we will make it much easier to add capabilities they can leverage towards their customer base - the end-users of global mobile satellite communications services. As the end-user base demands new capabilities in the future, we are ready for the ride.

FEATURES



Jude Panetta,
Group President, Satellite
Communications Group,
Andrew Corporation

In comparison to the previous year, 2006 appears to have been another growth year for the satellite industry as a whole. Network expansion in consumer, enterprise, and government sectors has

yielded many revenue opportunities for equipment and services around the globe.

During this past year, the successful launch of Ka-band services in the United States has been a key event in the satellite industry. This effort has proved that the commercial use of these frequencies is not only possible, but also offers significant benefits that will positively impact the future growth of satellites as a competing technology to deliver services economically.

Andrew's Satellite Communications Group is experiencing growth (approximately 10% over the previous year in ongoing businesses) that is consistent with the industry projections.

We believe that 2007 will offer many global opportunities for the satellite communications sector. In particular, North America will remain an important market for new networks and services, while Asia has just begun to emerge as the next largest economic growth area for our industry. In addition, Andrew continues to see growth in developing communications markets such as Eastern Europe, Russia, the Middle-East and Africa.

Significant changes for 2006 include the expansion of consumer broadband via satellite and the ever increasing use of satellite technology in disaster recovery and homeland security.

The triple play convergence of technologies that include terrestrial, wireless, and satellite are becoming more of the norm for networks. Our industry needs to be flexible and accepting of a working partnership with competing technologies in order for us all to achieve better products and services to fuel the growth of satellite communications for the future.



Morten Tengs,
President, Telenor Satellite
Services

Telenor Satellite Services has experienced solid growth in a variety of fixed and mobile services throughout 2006. Specifically, our maritime VSAT services have increased in 2006 with the signing of several fleet-wide contracts such

as BP and Norwegian shipping company DOF. We also purchased systems integrator Norse Electronics to help keep up with demand for our Sealink maritime VSAT installations. Also, subscriptions and terminal activations for our BGAN (Broadband Global Area Network) services have shown a steady increase since the commercial launch of the service late in 2005. We have seen a decline in some event driven "on-demand" mobile services, such as Inmarsat GAN, as end users begin to migrate to mobile broadband alternatives such as BGAN.

Telenor Satellite Services has continued to expand its network of global service providers offering a mixture of fixed and mobile satellite services. We now have more than 400 service providers worldwide. In addition to substantial growth in our Sealink maritime VSAT solutions, our Corporate Networks land-based broadband services have also grown, especially in Europe and the Middle East. And, in the face of aggressive competition and competitor consolidations, we have maintained our share of the Inmarsat mobile services market. Additionally, both of our wholly-owned retail sales subsidiaries, Marlink and GMPCS Personal Communications, have experienced consistent sales and revenues throughout 2006. Overall, Telenor Satellite Services expects to end 2006 at revenue levels similar to 2005.

2007 will be an exciting year for Telenor Satellite Services. Telenor ASA announced on October 26, 2006 an agreement to sell Telenor Satellite Services to Apax Partners for \$400 million. Apax Partners is a global private equity group that invests in five industry sectors that include technology and telecommunications. Upon completion of the sale, which we expect to close during the first half of 2007, TSS will become an integral part of Apax's investments in satellite communications. Earlier this year, Apax entered an agreement to acquire 100% of France Telecom Mobile Satellite Communications. Apax also currently owns an interest in Intelsat.

The satellite communications industry is continuing to evolve and change. The individuals and organizations that can

FEATURES

successfully adapt to change are the ones that will win in the competitive marketplace. The sale of Telenor Satellite Services to Apax is a unique opportunity that enables the company to continue to be a key player in the ongoing consolidation efforts in the industry. The challenge for Telenor Satellite Services in 2007 will be to work to effectively integrate our business with other satellite industry assets owned by Apax and achieve business synergies as quickly as possible.

As I said previously, the satellite communications industry is continuing to evolve and change as consolidation continues to take place. The sale to Apax enables Telenor Satellite Services to continue to be a key player in the ongoing consolidation efforts. The sale will also result in business synergies that will improve market competition resulting in the delivery of innovative, cost-efficient products, services, and applications to customers.



Amiram Levinberg,
CEO, Gilat Satellite Networks

In 2006, the satellite industry demonstrated solid growth over 2005. During the year, we saw more business in emerging markets, especially through Universal Service Obligations (USOs) and other similar government-funded bids, as well as initiatives dedicated toward the consumer sector.

A major initiative within the government sector that significantly impacted the industry is the Mexican Ministry of Education (SEP) Enciclomedia program. Here, in a massive effort and investment by the government to reach more than 140,000 Mexican classrooms, satellite industry players were called upon to provide satellite-based connectivity to schools.

Significant growth in the consumer market can be seen not only in the U.S., but also in international markets such as Australia, where Optus is providing rural broadband services to thousands of customers throughout that continent's most remote locations.

Reflecting the industry's overall strength, Gilat Satellite Networks reported three successive quarters of improved financial results in 2006 so far. In the third quarter, Gilat's revenues reflected a 30 percent year-over-year growth. Net income and positive cash flow were also up for the first nine months of the year, compared to the same period last year. We

also announced that York Capital Management exercised its option to convert its \$70.4 million loan into equity. This demonstrates a strong vote of confidence in Gilat and significantly strengthens our balance sheet.

In addition, the introduction of the Cisco VSAT Network Module was a significant event in supporting the awareness of VSAT technology to serve business-continuity needs of major corporations and the disaster-recovery needs of government agencies. The VSAT NM operates with the SkyEdge Hub to provide integrated satellite communications via Cisco routers. Cisco's move enables selected VSAT service providers worldwide to collaborate with Cisco to help new and existing Cisco customers deploy broadband satellite networking solutions.

In 2007, we expect the VSAT market to continue its growth. We see an impact on the U.S. consumer market through the planned launch of two Ka-band satellites dedicated to that market. In addition, there is a growing trend in hybrid networks for business-continuity and disaster-recovery applications. This is where our initiative with Cisco will come into play. With the Cisco router's capability to provide satellite connectivity, these important emergency-restoral applications will be served.

Our growth strategy includes enhancing our leadership position in core markets; expanding our presence across the communications value chain; a focus on emerging markets and on business continuity, and entering into new strategic markets. We have identified a number of markets which we believe will be strategic to our future growth, including Broadband Wireless Access, or BWA, solutions and additional government markets. Within the international market, we are also seeing VSAT technology expanding into new markets, such as, cellular backhaul and SCPC services.

The trend toward mobility is a significant change. Hence, the continued effort by VSAT vendors to work with mobile operators to enable global wireless coverage. We also foresee the need for convergence – where wireless satellite technology and non-satellite alternatives will continue to combine forces to provide triple-play services. We also expect the growing trend toward USOs to continue. This demonstrates governments' recognition of the importance of investing in their national infrastructure, to provide telephony and Internet access to all citizens.

FEATURES



Serge van Herck,
CEO, Newtec

2006 has been an exciting year for our industry and a historical one for Newtec. The introduction of DVB-S2 has been one of the major trends in our industry. At IBC2006 we have introduced yet another new product and technology breakthrough, with the world's first implementation of DVB-S2 ACM for

DSNG applications. Customers around the world have shown impressive interest in our industry leading DVB-S2 based products and systems, boosting our core product sales with more than 40%.

Over the last year our customers have confirmed more than ever that they endorse our ambitious mission 'To Shape the Future of Satellite Communications'. With over 1,500 units sold since its introduction last year, our DVB-S2 equipment is now being considered as a reference in the broadcast and SATCOM industries. Not only did we deliver several 2Way-Sat networks - our leading DVB-RCS compliant broadband system for small and medium enterprises and large corporations - but several leading satellite industry players around the world have already adopted our newest and most innovative network solutions. SES-Astra and the Arab State Broadcasting Union (ASBU), two market leaders and technology trendsetters in their respective markets, recently signed major multi million cooperation agreements with Newtec for the delivery of our new Sat3Play® and MENOS® systems:

- Sat3Play® revolutionizes the industry by offering low cost triple play services (TV, Internet, VoIP) to consumers, as well as easy-to-use satellite services for businesses. It will enable SES-ASTRA to provide cost effective two-way-satellite-internet access services for home users at prices comparable to those of terrestrial broadband services.

- MENOS® is the next generation Multimedia Exchange Network over Satellite that will enable ASBU and its broadcaster members to easily exchange live and recorded video and audio feeds while benefiting from a range of integrated data and voice services.

We foresee that the deployment of our Sat3Play® and MENOS® systems will be major events shaping the future of our industry.

Our ambitious mission requires us to excel and to grow. It also requires us to be closer to our customers. Over the past year our staff has grown with more than 35 new enthusiastic members, and now numbers more than 210. We have opened in 2005 and 2006 new offices in China, UAE, Brazil and South Africa and are now present in 8 countries over 5 continents.

We are very confident that 2007 will be another year of growth for our industry and our company. We expect growth figures that will be close to the 2006 results.



Dr. Denis Curtin,
COO, XTAR, LLC

I think 2006 will go down in the history books as the year of Consolidation. The closure of the Intelsat purchase of PanAmSat at the beginning of the year followed by SES Global's mid-year purchase of New Skies Satellite, were very significant for the industry.

Another noteworthy development late in the year was the Defense Information Systems Agency's (DISA) announcement that commercial X-band is now available for U.S. and Allied government users through the Defense Information Systems Network Satellite Transmission Services-Global (DSTS-G) contract. Approved DSTS-G contractors act as "neutral agents" for the government and can negotiate and acquire bandwidth services from any global or regional satellite operator. This was a very promising development for commercial providers of X-band services, such as XTAR.

The successful launch of SPAINSAT in March, which carries our XTAR-LANT payload, was a significant event for XTAR in 2006. With the addition of these eight transponders at 30° West to our XTAR-EUR inventory at 29° East, we have extended the reach of our X-band services from a region spanning Denver, Colorado in the U.S. all the way east to Singapore. We also are pleased to have closed additional sales in both the Federal and International marketplace this year.

For XTAR, the opening of the DSTS-G contract to include X-band bodes well for our business in 2007. Our commercial X-band capacity is backwards compatible with all legacy X-band terminals and operates at a higher power level, allowing terminals to operate at full capacity with no modifications. We

FEATURES

are coordinating closely with the three companies contracted through DISA to provide satellite bandwidth and related services to government customers through the DSTS-G contract to help fulfill requirements for commercial SATCOM capacity at X-band.

For the industry in general, trends in HDTV and its demands on satellite bandwidth will heat up dramatically. We saw the signs of this in late November when Discovery Communications announced it would use Intelsat's PAS-12 satellite to deliver HD programming across Europe. We anticipate that HDTV's high bandwidth requirements and growing demand will shift capacity from defense to commercial markets, possibly leaving an even greater shortfall of commercial SATCOMS available to the military.

The Intelsat/PanAmSat and SES/New Skies deals dominated the industry headlines in 2006. They were indicative of the growing influence of private equity firms and the continued consolidation of operators and perhaps even suppliers. Many operators are reviewing and reducing their fleet replacement plans, which in turn will continue to depress the manufacturing business. We also saw a virtual withdrawal from the commercial market of satellite builders Boeing and Lockheed Martin, which points towards a de facto market consolidation that has been discussed for much of this decade.

The addition of X-band to the DSTS-G contract is also promising for the future. It further validates our business case for commercially provided X-band services and we anticipate it will open the door to DoD operators seeking additional X-band capacity.



SCOTT CALDER,
CEO, MAINSTREAM DATA

2006 was the year of large bets in the satellite industry. As often happens when large, reliable industries mature, in 2006 we saw a wave of financial engineers step in to place billion dollar wagers on industry consolidation.

Mainstream Data, as in years past, placed *its* bets on adding *application* value and hybrid technology solutions to satellite transmission, providing outstanding customer service

to a highly diversified set of premier information company customers, and profitably expanding its business with the leading players in digital cinema, digital signage, and interactive distance learning

We see 2007 as a year when satellite and the Internet continue to be complementary and converging technologies. Our new products reflect that. While the bulk of our product line used to be satellite-centric, today we are really transmission-agnostic, with many of our customers utilizing both technologies. One of our unique products, our Medias Server, is reflective of this. It accepts both satellite and Internet feeds, which provides both enhanced functionality and redundancy. This allows clients of ours, such as the European PressPhoto Agency with the comfort of knowing that its digital photos will arrive at their destination, no matter what, over our "No Compromise Digital Network." The challenge will be the customer's continued demands for this type of reliability when it comes time to deliver absolutely mission-critical content.

Major satellite operators were gobbled up, of course, and disappeared in mergers with their competitors. This was largely financed with huge debt loads, a sure sign that Wall Street sees slowing industry growth, declining requirements for capital investment, and stable satellite prices in the "tea leaves." This year's unprecedented consolidation among satellite operators, and an apparent decline in available Ku-band satellite capacity, seem to point to a continuing shift in power from those who buy satellite capacity to those who provide it...

...But consider this going forward: today's common wisdom often becomes tomorrow's mistake by virtue of a collision of events. TAlready there is a strong contingent of industry contrarians predicting rough waters ahead for the suddenly highly-leveraged operators lumbering low in the water. This could come in the form of a spacecraft failure on the one hand or, just months away, the spectre of serious overcapacity as the DTH giants decide to enter the merchant market for satellite capacity. And how do we view the impact of plentiful, low-cost Ka-band capacity in the coming years? Or continued rapid penetration of terrestrial alternatives for IP capacity at low prices? The coming of WiMax? These would certainly alter the landscape and make the big bets look more dicey. Stay tuned... **SM**

FEATURES

2006: Europe's Action-packed Year

by Chris Forrester

A year ago we headlined our end-of-year European report as “What a Spectacular Year”. If 2005 was spectacular, then 2006 saw even more cream on top of the cake. And we were remarkably prescient in our forecasts: we accurately forecast that SES Global would be the front-runner in the acquisition battle for New Skies Satellite, which they bid for on December 14 last year, and which closed earlier in 2006. SES Global goes into 2007 in a very healthy state as the planet's Number 2 operator, and still looking to mop up a few more tasty morsels, of which more later.

Our other big 2005 story concerned Europe's second-largest satellite player, Eutelsat. The Paris-based operator had had a terrible time in transitioning into a fully quoted company, resulting in a pulled and then reinstated IPO. Well, what a difference a year makes! Eutelsat has blossomed and not only achieved Stock Market recognition, but approval for what they're doing. Indeed, while it is fair to stress the many major differences between Luxembourg-headquartered SES Global, and Eutelsat (not least fleet size, revenue, profitability and the like) the bottom line for Eutelsat has been nothing short of amazing over the past year.

Its autumn quarter-year revenues (period to Sept 30) were 6% up on the same period last year, with video applications rising an impressive 10.7%, and all from organic growth. This year Eutelsat will generate just over \$1bn in overall revenues. It has just won an



Friends at Last? Leading Europe-based satellite operators sign agreement on October 30 for a joint S-band initiative in Europe called Solaris. In photo are from left, SES Global CEO Romain Bausch and Eutelsat CEO Giuliano Berretta.

order for extra capacity from Canal Plus Group, to deliver the important Canal Satellite channels to viewers of Television Par Satellite (TPS), which Canal Plus absorbed back in January 2006.

In terms of pay-TV activity the consolidation between France's two rival pay-TV groups was the big event of the year, and it will be interesting to see if Canal Plus continues expensive dual emission of its channels over both the SES Astra and Eutelsat systems. SES Global's president and CEO Romain Bausch thinks his operation has a degree of certainty over Canal Plus.

“The decision as to which satellite to use is one for Canal+ Group and the current situation, more or less, sees Canal enjoying a two to one ratio over TPS in terms of dishes installed. There's another element in this mix, which is that many TPS subscribers have a dual feed dish that means they can also receive signals from Astra at 19.2. So we believe that in terms of re-alignment of dishes, Astra is in a very strong position. There's another reason why we remain optimistic and this is because we have very long term, non-cancellable contracts with Canal Satellite. From other sources we understand that Eutelsat

FEATURES



contracts that cover only six transponders according to Eutelsat, are not so strong or long term.”

The rumours and reports of merger between Canal Plus and TPS had been around for years, with both parties admitting that consolidation was the only way to succeed in an increasingly challenging French pay-TV market. The new entity has a total of 7.5m subscribers (9.8m subscriptions) and a major foothold in satellite TV, as well as channels present on cable, DTT and broadband systems.

Eutelsat’s \$1bn target revenue for this financial year is dwarfed by SES Global’s, which this year is expected to hit the \$2bn mark, helped by the New Skies Satellite acquisition, and consolidation of specialist subsidiary ND SatCom. “SES sees strong organic topline growth in 2007 of a high-single digit 8% growth, while next year’s expected EBITDA growth of more than 9% will benefit from the integration of New Skies,” said CFO Mark Rigolle.

SES, and to a certain extent Eutelsat, have benefited hugely from Europe’s enthusiastic adoption of HDTV, with satellite outperforming cable in just about every market. Players like BSkyB, now supplying 11 high-def channels, Canal Plus, Sky Italia and other pay-TV suppliers are all beaming out HDTV. Indeed, SES set out at the beginning of the year saying it expected to be supplying 100 high-def channels by 2014. Within a few months that estimate had altered considerably, and helped by the fact that it is already broadcasting around 20 HDTV channels. Speaking in August, CEO Romain Bausch said Astra now expected to reach the magic 100 high-def channels by 2010, barely 36 months away.

To help cope with this anticipated expansion in demand SES is ordering new satellites for Europe. It already has some 286 transponders operating (and an 84% ‘fill rate’), with capacity very tight over its UK and mainland Europe orbital positions. Bausch said Astra’s high-def confidence is helped by a

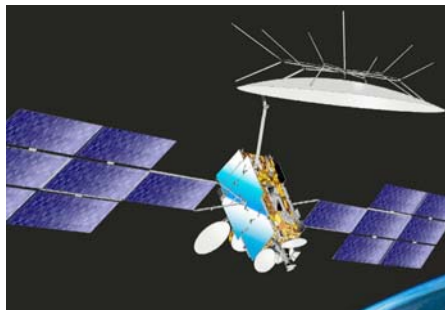
ground swell of consumer support for HDTV. This “100 channel” HD target will help ameliorate the still heavy dependence on German analogue channels.

Bausch told analysts that SES Global’s strategy was “unchained” with its primary focus being on core satellite infrastructure. This past summer SES Global’s main Board approved procurement of another pair of satellites (Astra 3B and New Skies’ NSS-9) on top of a heavy satellite-building programme averaging 3 new craft a year for the next 3 or 4 years. Bausch said SES was in the middle of a “most dynamic” phase. Astra 1L is due for launch in “early” Q1/2007, which will allow Astra 2C (currently on station at 19.2 deg E) to move to the ‘UK’ orbital slot at 28.2 deg E, and provide some much-needed extra capacity (between 10-16 extra transponders) for Britain and Ireland.

New Sat-Venture

Normally SES and Eutelsat are steadfastly at loggerheads but just for once all was sweetness and light when on Oct 30 in Paris, they announced a joint S-Band initiative for Europe, dubbed “Solaris”. Romain Bausch and his opposite number Giuliano Berretta at Eutelsat presented their scheme to fund and launch an S-Band payload on Eutelsat’s upcoming W2A craft, with the payload supplied by Alcatel-Alenia (a Spacebus 4000C4) and a launch date late in late 2008/early 2009. Most noticeable element of the orbital project will be a giant 12m antenna on W2A. “A joint-venture was an obvious conclusion,” said Berretta, given that risk was reduced. Bausch said both companies had been investigating the market potential for broadcasting to mobile phones, and other devices. SES had been looking at using a planned Astra 3B for its piggyback payload, but this element would now be dropped, al-

FEATURES



Eutelsat's W2A craft, carrying its 'Solaris' S-Band payload

though 3B will go ahead as a conventional DTH bird.

In truth, of course, there are plenty of occasions when the two fierce commercial rivals co-operate, not least in terms of Brussels-focused lobbying and legislation. This venture is a landmark in that it represents the first by either business in S-Band (downlinking in 2170-2200 MHz) or indeed, by anyone over Europe. "This is not in competition with terrestrial infrastructures, but as a complementary service," said Bausch. Terrestrial repeaters would be used in urban and suburban areas, with satellite providing the gap-filler. "This is not about competition between the various mobile TV technologies," said Bausch, referring to S-Band and DVB-H, and while the transmissions would be compatible with DVB-H, he forecast a rapid standardisation some 18-24 months from now as to receiving units. This was confirmed by a matching announcement from Alcatel and Samsung. The agreement represents a substantial move to "put satellite on the map when it comes to the development of mobile broadcasting in Europe," Bausch added.

The overall investment is "about •130m (\$165m) for the S-Band space segment payload" plus modest additional infrastructural costs, said Bausch. "Both parties are committed to deploying this technology, with the j-v com-

pany responsible for commercialising the technology," said Bausch.

W2A's overall S-Band capacity will have a maximum of 6 spot beams, but it is also possible to have just 4 beams, thereby boosting the output power. Berretta talked about supplying up to 60 channels as part of the system, based on about 10 channels targeted for each market for satellite reception into rural areas. When terrestrial repeater capacity was added the end result could be up to about 30 mobile-TV channels for each market, said Berretta.

Berretta added that W2A would be Europe's biggest-ever satellite, and was a highly innovative mission. The j-v would not be involving itself in any sort of terrestrial activity. Berretta said the craft's multiple spot-beams would cover Europe's main countries, and additional applications would be examined besides mobile television "in particular radio" said Berretta. Alcatel is looking at providing its support to SES and Eutelsat for a delivery of an S-Band service as a "complementary system".

The market opportunity, said Berretta, could reach 20% of mobile subscribers by 2015. "However, our internal forecasts are more moderate [30m-50m subs by 2015 in Europe], but it is still a large potential market." Berretta explained that the functionality included potential harmonisation with the Galileo GPS system. "At the moment DVB-H's deployment will occur around 2008 and we think we will be ready at launch date to be ready with these extra frequencies."

Quite how the 'Solaris' S-Band plan will affect other European plans for DARS radio services can only be guessed at. We covered the current state-of-play in the DARS sector in our November issue.

German storm

But SES Global is also at the centre of a storm in Germany, which earlier this year saw Eutelsat – back in arch-rival form – lodging legal objections against SES. The background is straightforward enough, and has SES Astra looking to convert the German television market from a free-to-air and mostly analogue transmission model to digital – and pay. German viewers already have to pay for a TV licence, of course, and for each TV set in the home! But other than this licence, almost all TV is 'free'. Pay television has not taken off (only 3m subscribers), and why should it when almost every household has dozens of channels being broadcast for zero fee, other than a very modest cable fee. Satellite levies no charge at all. This has created something of a monster, in that viewers have little incentive to 'trade up' to premium channels, and therefore there's little incentive for broadcasters to launch new niche channels.

SES, along with channel operators like RTL and music provider MTV, has attempted to kick-start a shift towards digital but proposing a new encrypted tier ('Entavio') where new channels would reside. The fee, a paltry •3.50 a month (\$4.50). How would you like to view a 'big basic' bundle of channels for such a low sum? Which, more or less, was SES' view. Immediately, Eutelsat stepped in and argued that SES, along with the scheme's other supporters, were planning a cartel, which forced the German Cartel Office to investigate, and this action has been running for most of 2006. The action has affected SES Global's share price, as well as damaging SES Astra's reputation in Germany.

Worse, perhaps, Germany's powerful public broadcasters, ARD and ZDF, have scorned Astra's digital plan. "Astra is trying to choke digitalisation in

FEATURES

Germany with its basic encryption”, ZDF’s production director Andreas Bereczky criticised Astra in an interview with “Kriebel’s Sat-Report”, a German trade publication. “We currently see tremendous uncertainty amongst viewers who don’t know how to act in the transition from analogue to digital. I don’t know who would benefit from basic encryption.”

SES Global’s Romain Bausch says he remains enthusiastic about the Entavio encryption plan: “I remain convinced that Germany needs a competitive distribution platform for all kinds of digital TV content by satellite because we need to ensure that satellite remains competitive in the German market when competing with cable and DSL services. Today there are 16 million DTH homes in Germany and it’s very clear that somebody has to offer a platform to make sure that the German TV viewer gets a content line up that’s as interesting on satellite as it might be on cable or DSL.”

“As for ARD and ZDF,” said Bausch, “these are the public TV channels and these will continue to be transmitted on satellite in the clear. But if RTL, MTV and others ask us to encrypt their signals, we will do so. However if broadcasters want to stay in the clear, they can stay in the clear, both options will be available but Entavio will allow all the pay TV operators to stay on satellite with their pay channels.”

Bausch added that with Hollywood studios as well as sports producers increasingly demanding that content is encrypted, the world of wholly free transmission was under threat. “It’s not so much that [Germany’s public broadcasters] will miss opportunities by staying in the clear, but because they are financed by a relatively high licence fee

of about •19 a month, and with viewers having to pay for each TV set in the house, the broadcasters are afraid that the 16 million homes, almost half Germany’s homes, would end up also having to pay the technical fee that we are proposing. This puts into question the way they are currently financed, and this is a potential problem for them.”

Nevertheless, Astra still has to get Entavio past Germany’s Cartel Office. But here, it seems, Astra is now on more solid ground. Dr. Ulf Böge, President of the Cartel Office, speaking in October said he assumed that the platform will end up being designed in such a way that the Cartel Office has nothing to block. Bausch confirmed this thinking: “There will be a Entavio project, that’s absolutely clear. The question remains as to how close to the original plan we can stay while at the same time seeing approval from the Cartel Office or whether there will be some changes.”

Before we wrap there’s just one other major element that concerns both SES and Eutelsat, and that’s the ever-present possibility of further industry consolidation. The year has seen two major European players being acquired in a seemingly never-ending game of ‘Monopoly’: New Skies Satellite, as we have mentioned went to SES, while Telenor Satellite Services in November accepted a bid from Apax Partners. Telenor, already handling a huge amount

of Intelsat and Inmarsat traffic could be further integrated by Apax into either of these global players because Apax has interests in both Inmarsat (with Permira) and Intelsat (via Zeus Holdings).

But there could be more. Telesat of Canada is very definitely ‘in play’, and Eutelsat might be a buyer. SES Global is also looking for fresh opportunities, with Bausch specifically identifying the Asian region where there are currently 26 independent satellite operators, many operating just 1 or 2 satellites. “Consolidation is a permanent feature of our business,” he adds, although stresses that SES Global’s future ambitions needn’t be limited to Asia. SES already has a 34% economic interest (but 50% control) in Hong Kong-based AsiaSat.

In other words, prepare for an action-packed 2007. SES Global and Eutelsat never disappoint us in their wish to grow bigger – and even occasionally to work together on projects like Solaris. They’ll expand organically, helped by growing enthusiasm for HDTV and new channel launches, and they’ll grow through their voracious appetites for smaller operators. The year will not be dull! **SM**



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

VIEWPOINT

Technology Solutions for Off-shore Markets

by Bruce Elbert

President, Application Technology
Strategy, Inc.

photo courtesy of CapRock Communications



An example of an installed CapRock stabilized antenna system designed for deepwater drilling vessels.

Visible Trends

Big oil, exemplified by ExxonMobil, Chevron, Shell and BP, need flexible and reliable bandwidth for an array of applications that can be delivered to difficult-to-reach places. Therefore, the old standbys of line-of-sight microwave and high frequency radio are not particularly

appropriate. Even the Mobile Satellite Service (MSS) providers are having difficulty meeting bandwidth needs, which now start at 512 kbps instead of 9600 bps.

Another important trend is that these major producers seem less interested in having their own telecommunications staff and investment to address long-haul communications needs; instead, there is a focus on the computers and other peripheral devices that make their businesses tick. As a result, there has been a push to outsource the physical network to specialized providers who purchase the equipment and satellite capacity, and install the systems on platforms, vessels and distant sites around Asia, Africa and South America. Some large field services

companies like Halliburton have outsourced their networks as well.

Satellite-based telecommunications service providers like CapRock, Stratos, Rignet and Petrocomm had focused on this niche and as a result, have seen their businesses grow. Smaller well-connected companies that operate in specific countries, notably Indonesia, Nigeria and Russia, are being pulled along as oil exploration hits a new high. All of these companies understand the needs of the oil and gas industry, which demands highly qualified people who are certified to work in the rough environment of the drilling platform and exotic destinations like Sakhalin Island and the North Slope of Alaska. The photograph below illustrates one of CapRock's VSAT solutions designed to withstand the harsh conditions native to the offshore energy industry.

Very small aperture terminal (VSAT) products from iDirect, Comtech EF Data VIPersat, Hughes and ViaSat are effectively applied to the range of needs at prime and remote locations. These devices offer dynamic bandwidth and flexible Internet Protocol (IP) services with Quality-of-Service (QoS) features that are made available in a manner more familiar to office workers in major cities. End-users expect all of the familiar business applications like email and VoIP; at the same time, technical staff on drilling platforms and specialized vessels apply workstation-level computer processing, high-resolution color imagery, and live TV of the ocean floor.

As world petroleum markets recover from last-year's challenges, the exploration and development of oil and gas reserves has reached new highs. Many large and small companies that supply communications products and services have seen impressive growth in demand. The Offshore Communications 2006 exhibition and conference, held a few weeks back in Houston, provided an update on how this sector relates to the satellite communications industry. Offshore 2006 was organized by Technology Systems Corporation and the Global VSAT Forum and impressed me by its vibrancy and commitment to the results-orientation that is the hallmark of "Oilpatch".

VIEWPOINT

Compact Ku-band equipment from VSAT and RF electronics manufacturers delivers these applications while meeting the tough logistical demands of international distribution, installation and maintenance. The traditional VSAT architectures of constant bit rate SCPC, asymmetrical TDMA with star topology, and symmetrical mesh TDMA each find their respective niche. The result is that the current large and small service providers can satisfy almost any demand placed on their networks and their people. Some of these requirements can even be subcontracted to trusted local partners who know the ground and business environment.

Companies that design and produce high-performance tracking antenna systems are making it possible for providers and users to have the right communications where they need it and under almost any condition. Ship-board terminals from SeaTel are visible on larger vessels and are now spotted on drilling platforms. Self-pointing antennas from a variety of providers, like KVH Industries, AVL and Swe-Dish, have proven their worth since they can be activated and operated on vehicles and temporary sites without extensive training.

Because of demands for high reliability and responsiveness, service providers need to maintain a 24-hour network operations center (NOC) that can answer customer questions and resolve problems remotely over the network. This is complemented by having field staff in close proximity who can be dispatched in short order.

Advancing Ku-band Satellite Reach

Rollout of these ground systems to serve oil and gas has had its impact on the provision of space segment. Import-

tantly, Ku band is now the driver as service providers and users employ the smaller antennas and higher data rates thus made possible. The newer birds from Intelsat, SES Americom and JSAT with EIRP upwards of 50 dBW have seen an increase in demand coming from offshore locations that heretofore were largely ignored. These operators also have learned how to better serve this community with more appropriate pricing and support services that reduce their customers' technical and business risk.

Ancillary Uses that Help Grow the Business

A corollary to this growth is a greater interest and potential demand for satellite communications for disaster preparedness and business recovery (although the dollars have not achieved the same level as off-shore uses). Many of the same resources that the aforementioned service providers offer to oil and gas users are usable by companies and government agencies that must respond to and recover from natural disasters.

photo courtesy of CapRock Communications



The technologies and service methodologies offer high confidence in the bandwidth thus delivered.

Our industry has adapted once again to changing needs by providing more appropriate satellite service, including equipment better geared to the off-shore environment. VSATs, compact self-pointing dishes and high-powered Ku band satellites are preferred due to the bandwidth offered as well as the smaller footprint for ground equipment. We find large and small companies active in this vertical market segment, productively using proven technology and giving the oil and gas user the tools needed to build energy resources for a greater global economy **SM**

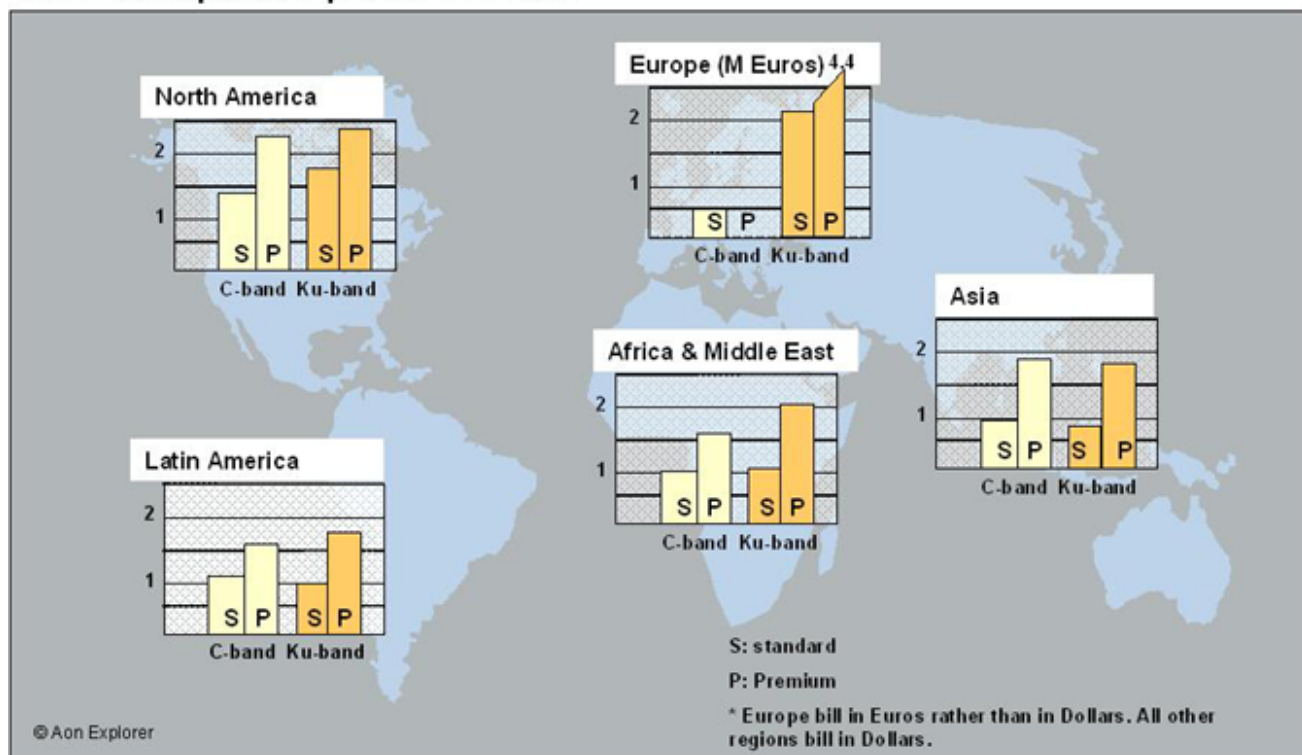


Bruce Elbert has over 30 years of experience in satellite communications and is the President of Application Technology Strategy, Inc., which assists satellite operators, network providers and users in the public and private sectors. He is an author and educator in these fields, having produced seven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

VITAL STATISTICS



2006 transponder prices in MUSD*



Transponder Lease Rates

- Satellite operators have been facing price cuts by 15-30% over the past three years, with average prices as low as USD 0.9 Million in Asia and USD 0.95 Million in Sub Saharan Africa and Latin America.
- Premium capacity refers to high value capacity offering video neighborhoods (both cable and DTH) and high power. As a result of the strong demand to reach millions of viewers receiving channels from this position, operators are in position to charge the highest rates on this premium capacity. However, even premium positions have seen their prices decrease especially in Asia and Latin America.
- Price pressure has been even stronger on standard capacity which is seen as commodity.
- Price recovery will be driven by rationalization of satellite orders and optimization of satellite fleets
 - The price pressure driven by satellite fill rate considerations should ease as over-supply lessens
 - Asset consolidation should reduce competition, thereby allowing price recovery

About Aon Explorer

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

MARKET INTELLIGENCE



Disaster Recovery, Emergency Management & Business Continuity: Learning to Talk the Talk

by David Hartshorn

Secretary General
GVF

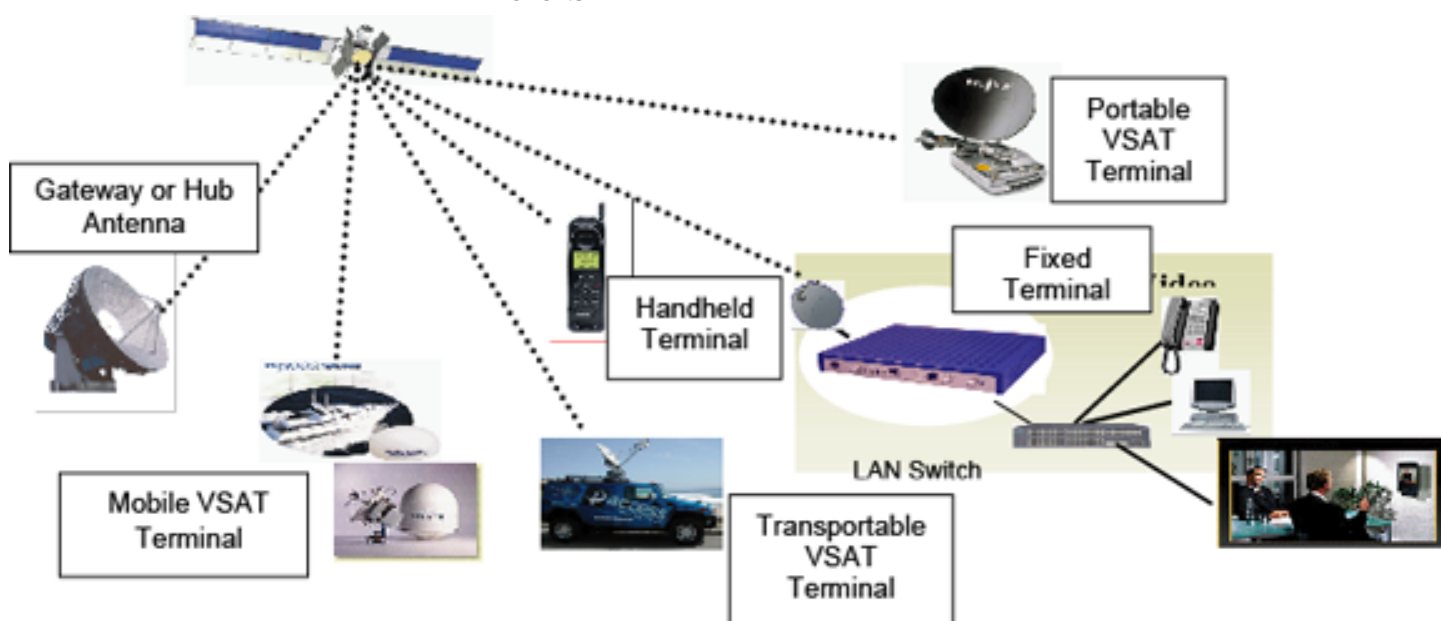
On November 12, a mixed group of IT directors, emergency managers, consultants and satellite industry executives sat for nearly eight hours in a small meeting room at the annual conference of the International Association of Emergency Managers (IAEM) in Orlando, Florida, where they spent the entire day attempting to do just one thing: Communicate.

The occasion and the objective were straightforward enough: A GVF Symposium was delivered for IAEM Members on “How to Build Communications into an Emergency Management

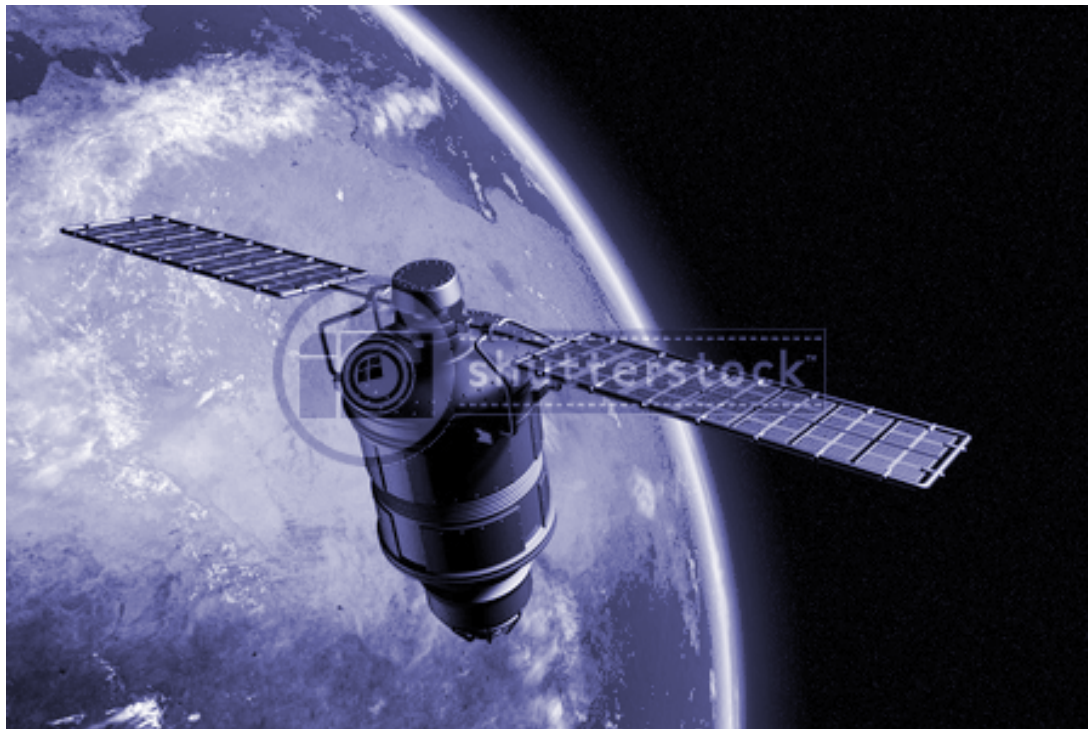
Operational Plan”. But the day-long dialogue was anything but straightforward. Indeed, throughout most of the proceeding, the delegates in the room discovered not only that they hailed from very different spheres of activity – each with its own set of internal challenges – but that they spoke, in effect, different languages.

Satellite industry executives heard emergency managers referring to “NIMS”, “access to inlets”, “EMAC”, “shift scheduling”, “IDIQ”, the “Urban Area Security Initiative”, and much more. Emergency managers, meanwhile, heard from the satellite industry about a variety of terms and terminologies that were largely, if not completely, foreign to

Satellite technology can provide narrowband and broadband IP communications (Internet, data, video, or voice over IP) with speeds starting at 64 Kbps from handheld terminals up to 4 Mbps bi-directional from portable VSAT antennas. Solutions using this topology can be used for both advance disaster mitigation services and to support relief and recovery efforts.



MARKET INTELLIGENCE



them: Service level agreements, dedicated vs. shared services, “VSAT”, “MSS”, “fly-aways”, and so on.

Added to these linguistic obstacles was the gradual realization by those in the room that each group faced major issues when contributing to the development and implementation of a communications operational plan for emergency management and disaster recovery. Major gaps to be bridged between the groups included:

- Ø The satellite industry’s need for up-front financial commitments from their emergency management clientele;
- Ø The emergency managers’ need for flexible “on-demand” payment plans that address the extreme difficulty that they face when requesting budgetary support for system and service purchases (particularly for pre-positioning);
- Ø The IT managers’ need for emergency managers to clearly convey their communications requirements in a way that enables IT managers to

effectively apply to their management for funding.

Eventually (and not without a significant degree of frustration), everyone in the room was able to explain their points of view and begin working together to develop an outline of a communications operational plan that addresses these challenges. To target the types of communications systems that will be needed to prepare for and respond to a disaster, the operational plan breaks disaster recovery into three phases: 0-24 hours, 24-48 hours, and 2-10 days

For each phase, the plan identifies system and service types, and a wide range of essential criteria and parameters to be considered. Are there public/private partnerships involved? (There often are.) Will the communications be mobile or fixed? What traffic-loading patterns are anticipated? Can the agency support advance commitments

for pre-positioning? If so, will the commitment be for dedicated solutions, shared networks or delivery of services and systems on an ad-hoc basis? How will training, installation, and maintenance be administered. And so on.

This draft plan is now being circulated more broadly to the 3,000 members of the International Association of Emergency Managers, who will be working with the satellite industry to refine the document so that it can serve as a tool for professionals charged with preparing for and responding to natural and man-made disasters.

Meanwhile, the satellite industry is expanding the dialogue to include other key groups involved with disaster recovery. These include non-governmental humanitarian organizations, such as CARE, Oxfam, Save the Children, World Vision, and many others. United Nations agencies are also being included, such as the UN High Commission for Refugees, World Food Program, and UNICEF.

All of these groups will be represented in a high-level GVF Summit later this month in New York City. Entitled “*Satellite-Based Disaster Recovery: Redefining the Critical Mission*”, the GVF Summit will be held on 28 November at the Omni Berkshire Place Hotel... the day immediately preceding the *Satellite and Content Delivery Conference & Expo* (www.SATCONExpo.com), which will be held at the Jacob K. Javits Convention Center in NYC on November 29-30.

The GVF pre-show Summit, which is endorsed by IAEM and sponsored by

MARKET INTELLIGENCE



CapRock Communications and Satlynx, will include a host of key emergency-management stakeholders, including the UN Children's Fund, UN Working Group on Emergency Telecommunications, NetHope, IAEM, State Farm Insurance, the American Red Cross, and others.

Satellite industry speakers this year will include Randy Neck, Vice President, CapRock Communications; Paul Heinerscheid, President & CEO, SatLynx; Pranab Bhowmick, Satellite Program Director, CISCO; David Hershberg, Chief Executive Officer, Globecom Systems;



David Hartshorn is the Secretary-General of the Global VSAT Forum. He can be reached at david.hartshorn@gvf.org

Arunas Sleky, VP of Global Marketing, Hughes Network Systems; Frank August, Regional Director, North America, Inmarsat; Karl G. Fuchs, Director Systems Engineering, iDirect Technologies; Matt Botwin, Chairman, GVF Regulatory Working Group & Senior Director, Regent Square Group; George Jusaites, Chairman, GVF Education & Training Working Group & Director, Business Development, Andrew Corp.; and Ralph Brooker, President, SatProf. **SM**

Visit www.gvf.org to download the program and to pre-register online.



US TV EXPLORER

cable-satellite-terrestrial analyzer

**8VSB
QAM
QPSK
DSS**





EXPLORER

TESTING CHANNEL SET: 123W_G10

40	DIGITAL DVB-S QPSK
41	ANALOG NTSC M
42	DIGITAL DVB-S QPSK
43	ANALOG NTSC M
44	UNIDENTIFIED
45	SEARCHING DVB-S CONFIG.

CANCEL SETUP

**just press
one key and...**

explore & identify

all channels automatically



DVB-S QPSK

VBER: >1.0E-8

FREQ: 1153.34 MHz C/N: 7.4 dB

DL-RX: 1153.34 MHz POWER: 72.3 dBmV

CH: C-11 11905.0 SPAN: 200 MHz

Shows all measurements simultaneously



Shows picture, service list, PID's,...



Minimum size & weight !



DATALOGGER

TEST POINT: ANTENNA

CHANNEL SET: AREA1

FREQ: 1153.34 MHz C/N: 7.4 dB

DL-RX: 1153.34 MHz POWER: 72.3 dBmV

CH: C-11 11905.0 SPAN: 200 MHz

Datalogger function

www.promax.es

Tel: +34 93 260 20 02

STOCK MONITOR

ADVERTISERS' INDEX

Company Name	Symbol	Price(Dec. 1)	52-wk Range
APT SATELLITE	ATS	1.65	1.20 - 2.10
ANDREW CORP	ANDW	9.99	7.08 - 14.25
ASIA SATELLITE TELECOMMUNICATIONS (ASIASAT)	SAT	18.35	15.91 - 19.60
BALL CORP	BLL	42.82	34.16 - 45.00
BOEING CORP	BA	89.55	65.90 - 92.05
BRITISH SKY ADS	BSY	41.90	33.59 - 43.75
CALAMP CORP	CAMP	7.20	5.44 - 13.90
C-COM SATELLITE SYSTEMS INC.	CMI.V	0.3550	0.23 - 0.56
COM DEV INTL LTD	CDV.TO	6.40	1.67 - 6.47
COMTECH TELECOM	CMTL	35.41	25.67 - 45.65
THE DIRECTV GROUP	DTV	22.70	13.28 - 23.33
ECHOSTAR COMMUNICATIONS	DISH	36.59	25.73 - 37.28
GLOBECOMM SYSTEMS INC	GCOM	9.29	5.88 - 9.70
HARRIS CORP	HRS	42.58	37.69 - 49.78
HONEYWELL INTL INC	HON	42.81	35.24 - 44.48
INTL DATACASTING CORPORATION	IDC.TO	0.1850	0.14 - 0.31
INTEGRAL SYSTEMS	ISYS	23.28	18.63 - 33.55
KVH INDS INC	KVHI	11.51	9.17 - 14.48
L-3 COMM HLDGS INC	LLL	80.92	66.50 - 88.50
LOCKHEED MARTIN CORP	LMT	90.35	61.26 - 91.14
NEWS CORP	NWS	21.43	15.75 - 22.40
NORSAT INTL INC	NSATF.OB	0.50	0.30 - 0.90
NTL INCORPORATED	NTLI	24.60	19.99 - 31.00
ORBITAL SCIENCES CP	ORB	18.17	12.13 - 20.36
QUALCOMM INC	QCOM	36.35	32.76 - 53.01
RADYNE CORPORATION	RADN	9.90	9.52 - 17.85
SIRIUS SATELLITE RADIO	SIRI	4.25	3.60 - 7.98
SES GLOBAL	SDSFA.F	12.45	-
TRIMBLE NAVIGATION	TRMB	47.80	33.15 - 52.40
WORLDSPACE INC	WRSP	4.60	1.90 - 15.10
VIASAT INC	VSAT	26.58	22.32 - 30.83
XM SATELLITE RADIO	XMSR	14.45	9.63 - 30.99

AAE Systems www.aaesys.com	8
AVL Technologies www.avltech.com	24
COMTECH EF DATA www.comtechefdata.com	6
Global Link www.globalinktv.com	16
L-3 Narda Satellite Networks www.lnr.com	18
NEWTEC www.newtec.be	9
MITEQ www.miteq.com	13
PROMAX www.promax.es	39
SES AMERICOM www.ses-americom.com	11

For real-time stock quotes go to www.satnews.com/free/finance.html