SATELLITE 2008
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WRAP UP » APRIL 08
A Supplement to Via Satellite Magazine

Satellite Executives Cast Eyes Toward SATELLITE 2009

BY MARK HOLMES

In the final panel of SATELLITE 2008, "Satellite SWOT: Challenges and Opportunities for Satellite Enabled Communications", industry executives discussed a variety of issues as well as casting an eye in to the future on what might be some of the hot talking points at SATELLITE 2009.

The Feb. 28 panel encompassed several themes that ran through the show, such as the strong prospects for satellite broadband, access to finance to fund business plans and lessons from previous boom-or-bust eras in satellite communications.

In terms of satellite broadband, officials from Hughes, ViaSat and WildBlue Communications believe the future is bright. David Leonard, CEO, of WildBlue, said he expects the operator to continue its strong growth. "We have 300,000 customers in North America. Our business is a solid one. We are able to provide DSL equivalent services today. We want to expand our space segment. We see our subscriber numbers increasing strongly in the next five to 10 years. We will also expand internationally," he said

Arunas Slekys, vice president and general manager, Russia and Newly Independent States for Hughes, said the company is equally bullish about the prospects for satellite broadband. "Broadband is exploding. We are seeing broadband grow in the consumer space. Satellite is becoming a core component of broadband," he said. "We are already thinking of Spaceway-4 (to meet this growing demand). We are seeing satellite become part of the mainstream."

Moorthy Hariharan, CTO, VSAT Networks Group for ViaSat, said, "We believe there is a sustainable business for consumer broadband."

All of the executives agreed that while opportunities were perhaps never better for the industry, access to capital is likely to prove very tough over the next 12 months. "Capital is always available. It will gravitate towards least risk with highest return," said Leonard. "It is a very turbulent capital market right now. An infrastructure business is by in its nature very capital intensive. You have to make sure that satellite business models are attractive. As the density declines, the cost of economics for a terrestrial networks fall off a cliff. You need hybrid architectures."

Michael Polmar, vice president of sales for Lavell Systems, said getting access to funding may not be as difficult as it might be perceived right now. "Finding funding if you have a growth market may not be as difficult as you

page 6 ▶

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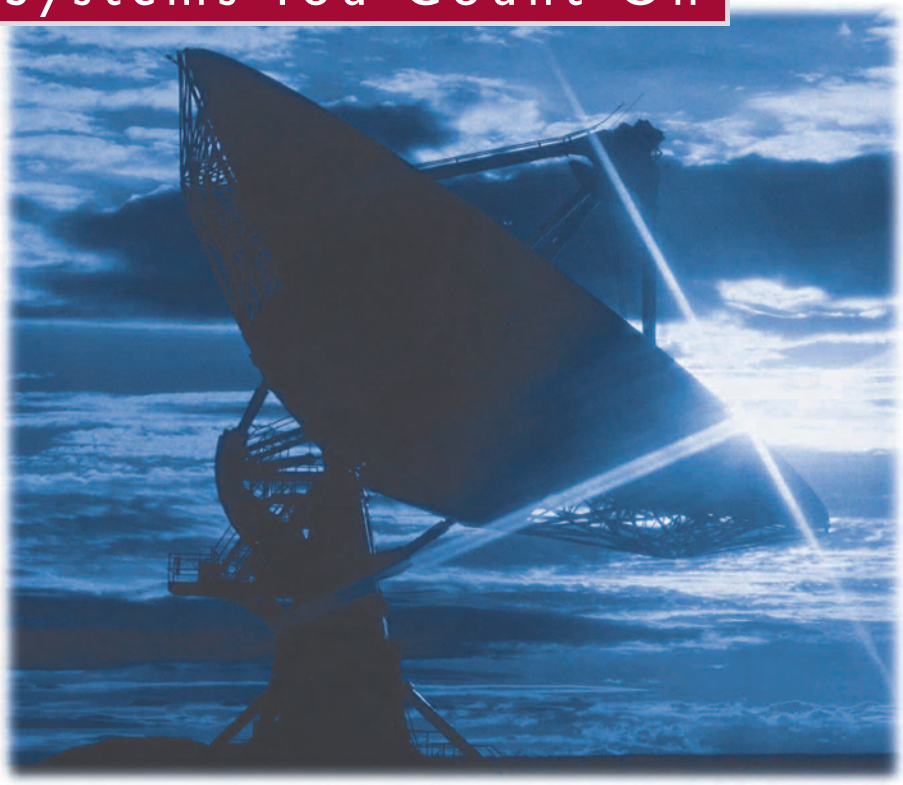

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Industry Optimism Tops Doubts About Overall Economy

It's hard to avoid almost daily news that the state of the world's economy is uncertain at best. The news shows, Internet sites and even casual conversations include some type of statistic or anecdotal evidence that the times may be getting tough.

But the Washington , D.C., convention center seemed to provide an oasis of positive news, as panel session after panel session and conversations around the exhibit hall indicated that many within the satellite industry are looking toward the future with a optimism. Executives in many satellite segments spoke glowingly of the opportunities they see in their businesses, as populations around the world seek greater access to information and entertainment.

And this optimism about the industry extends beyond traditional satellite companies, as bigger names now see revenue opportunities in the industry.

"The space segment has become so important to Cisco that we have created a vertical to serve the space business," says Robert McIntyre, CTO of the service provider group at Cisco. "We see Internet traffic rates growing 40 percent per year over the next five years. The best solutions are always hybrid solutions. You need a part satellite segment delivered with a terrestrial segment. The best way to point-to-multipoint is still satellite."

Even the capital markets, which are becoming much more cautious in their activities, still see the opportunity in satellite players, according to many industry officials. "Capital is always available," says Dave Leonard, CEO of WildBlue. "It will gravitate towards least risk with highest return. It is a very turbulent capital market right now. An infrastructure business is by its nature very capital intensive, [but] you have to make sure that satellite business models are attractive."

In the face of a potential global slowdown, the satellite industry offers many strong opportunities. But it will take skill to turn these opportunities into revenue. It is time for the industry to show the world that satellite is the way to go. ■

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MDA	RADARSAT-2
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October 5 – Ariane 5	
INTELSAT	Intelsat 11
'yes' OPTUS	Optus D2
August 14 – Ariane 5	
HUGHES	SPACEWAY™ 3
B-SAT	BSAT-3a
May 30 – Soyuz	
Globalstar	Four Globalstars
May 4 – Ariane 5	
ASTRA	ASTRA 1L
INTELSAT	Galaxy 17
March 11 – Ariane 5	
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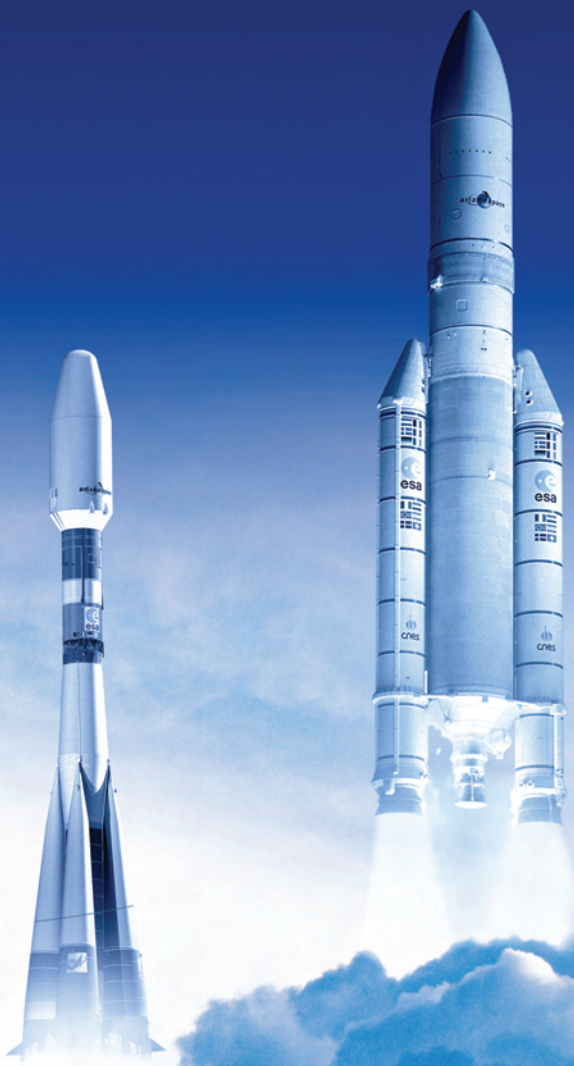

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SWOT

from page 1

think," he said. "There is a lot of private money on the sidelines. If the industry is healthy, you will find the money."

Due to better overall financial management, Keith Volkert, CEO of SCI, said he did not expect the satellite industry to return to a period of boom or bust. "I don't think we are going to have a boom or bust period. I see this as a positive period," he said.

Slekys also believes it is unlikely that the satellite industry will see the wild business swings that have characterized some recent periods. "You are comparing us to the period of time when people were betting on smoke and mirrors (in the 1990s). Our slowness of foot over the last few years could be an advantage," he said. "We are nowhere near the numbers that satellite could be in the satellite broadband marketplace."

With lessons hopefully absorbed from the past, the satellite industry will hope to make good on its investments to serve customers with the latest of video, mobile and broadband applications. One difference since the late 1990s is that a number of markets in Eastern Europe as well as Asia appear ready to see major uptake of satellite services.

Hariharan pointed to India as one market where there has been recent huge growth in the delivery of pay-TV services over satellite. Slekys said Eastern Europe, as well as markets like India, offered huge growth opportunities to a company like Hughes.

With attractive growth markets across the world and a seemingly insatiable demand for content driving the need for ever increasing amounts of bandwidth, the satellite industry certainly seems to be attracting a lot of interest. This was underlined by Robert McIntyre, CTO of the service provider group at Cisco. "Space segment has become so important to Cisco we have created a vertical to serve the space business," he said. "We see Internet traffic rates growing 40 percent per year over the next five years. The best solutions are always hybrid solutions. You need a part satellite segment delivered with a terrestrial segment. The best way to do point-to-multipoint is still satellite."

McIntyre highlighted the growth in the video market, which was making satellite an even more compelling solution. However, he warned that satellites had to keep up with demand in order to part of the networks of the future.

"We believe the network (of the future) needs to be IP converged," said McIntyre. "If the satellite becomes (bandwidth) constrained, it won't be part of the overall solution in the next five years. There is never going to be enough bandwidth. The network (of the future) will be IP based."

One of the few troubling issues addressed by the panel was the difficulty attracting new engineering talent to the satellite industry, and this could become more of a major issue going forward.

Stuart Daughtridge, executive vice president, commercial division, Integral Systems, said, "We are competing with other industries for the best minds, but it is challenging."

Denis Curtin, COO of Xtar commented, "Who is getting into engineering? I tried hard with my own family (to persuade them to go into engineering), but they decided not to."

Volkert also painted a fairly bleak picture. "I think in terms of next-generation engineers, those satellite design engineers are aging. When I look at the age of our core engineering group, it is very hard to find to drive the satellite design industry," he said. "We are still building launchers the way they looked a few years ago. There is going to be a problem here. Some of the satellite manufacturers need to address the problem of engineering talent." ■

> **"We believe the network needs to be IP converged. If the satellite becomes constrained, it won't be part of the overall solution in the next five years."**
>
> **—McIntyre, Cisco**

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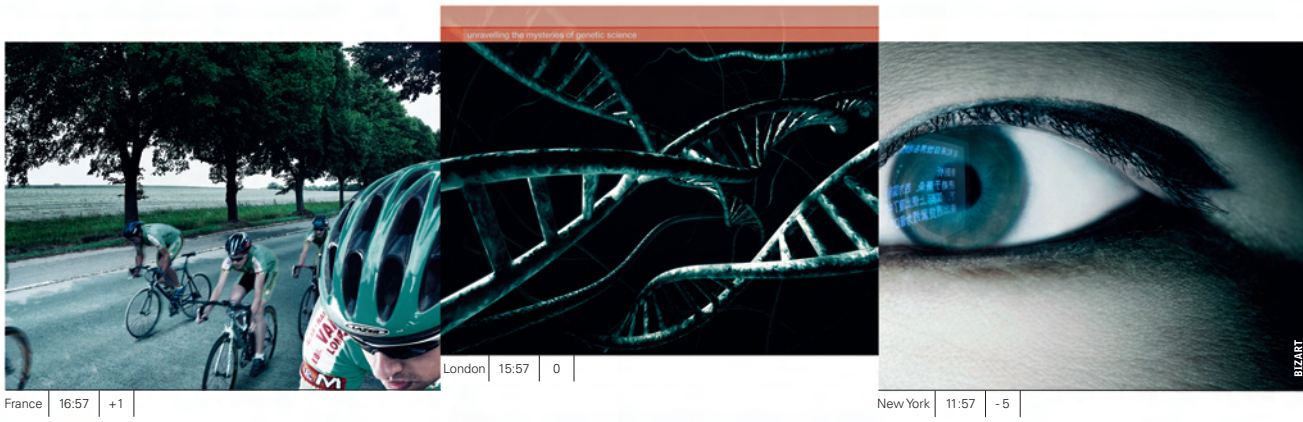

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SATELLITE 2008 Epilogue
Hitting All the High Notes

BY SCOTT CHASE

SATELLITE 2008 concluded on a high note of optimism for the global satellite-enabled marketplace, with executives from virtually all market sectors expressing optimism and excitement about the year ahead. The CEOs of the world's largest satellite systems all concurred that various services, most notably broadband offerings via satellite, are set to explode, while mainstream applications such as video, broadcast and services to the military appear poised for continued steady growth.

The positive spirit for the future was so pervasive that at least two or three well-placed senior executives felt moved to proffer a smidgen of caution. The theme of "let's not get so carried away with enthusiasm that we create conditions for a significant industry downturn some years out" — as happened at the turn of the century — was posited as a warning to beware the "boom-and-bust" cycle that at times has characterized satellite-enabled markets.

A preliminary count showed that more than 1,200 satellite industry professionals attended the opening general session, featuring the chief executives of SES Global, Intelsat, Eutelsat and Telesat. The leaders outlined their plans for the near- and long-term future, and much emphasis was placed on the expansion of demand for video, including high-definition TV and, downstream, IPTV and mobile video. Initiatives such as dedicated and shared Ka-band platforms, investigations into S-band, and continued acquisitions of opportunity were openly discussed, and a general sense of friendly if intense competition kept the exchanges lively and informative.

One area in which all of the CEOs agreed regarded the availability and cost of launch services. With older in-orbit satellite capacity being retired or rationalized, and new spacecraft starting to fill the queue of accessible launch dates and vehicles for the next several years, concern was expressed that the right ride might not be ready at the right time for the optimization of business plans. Although the global satellite industry has faced this problem in years past, typically the reason for disruption in schedules was related to launch failures — not planned launches exceeding available capacity. For the world's launch services providers, however, this is mostly good news.

Also witnessing robust growth, according to the segment's assembled chief executive officers, is the mobile satellite services (MSS) arena.

Initiatives such as dedicated and shared Ka-band platforms, investigations into S-band, and continued acquisitions of opportunity were openly discussed.

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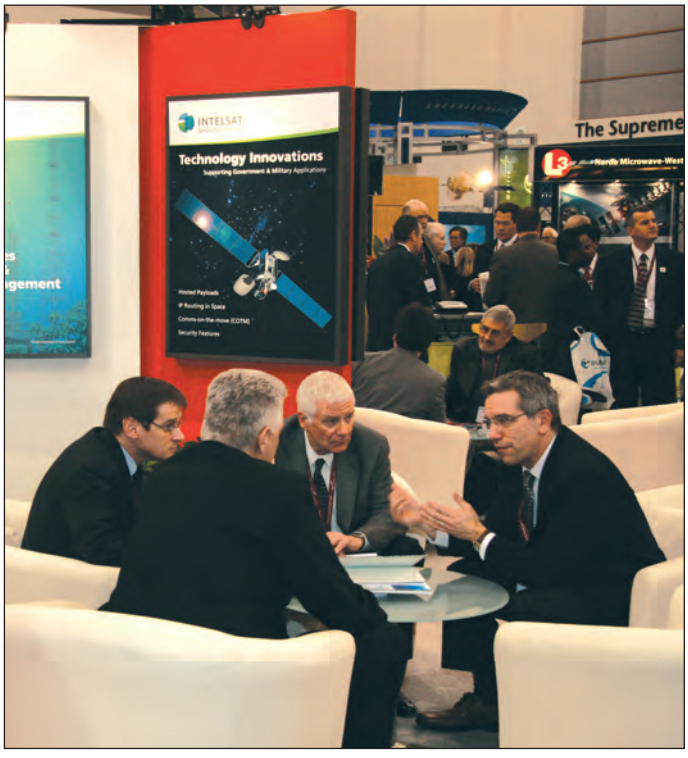
Deemed ripe for consolidation, the leaders of Inmarsat, ICO, Iridium, Terrestar, MSV and Globalstar all said they would still be in the market and on the panel at this time next year. Although most industry experts and analysts expect some shakeout in the coming months for MSS, the speakers at SATELLITE 2008 were adamant that they have the plans and the access to capital to keep the ball rolling.

Meanwhile, the world's satellite manufacturing giants expressed optimism that 20 to 25 new commercial spacecraft will be ordered in the coming year. This represents significant new capacity on orbit downstream and will put pressure on the various players, all of whom having shown great tenacity in the face of razor-thin margins and in some cases occasional lapses of support from corporate headquarters, to build flawless platforms. Driving at least some of the demand for new spacecraft is the re-emergence of various "national" satellite systems such as those underway for Vietnam, Pakistan and Abu Dhabi; the continued expansion of Ka-band orbiters such as Viasat-1 and Eutelsat's Ka-Sat; and other programs.

Little was said regarding the additional pressure manufacturers and launch vehicle providers may feel in the coming years from resurgent participants in India, China and elsewhere.

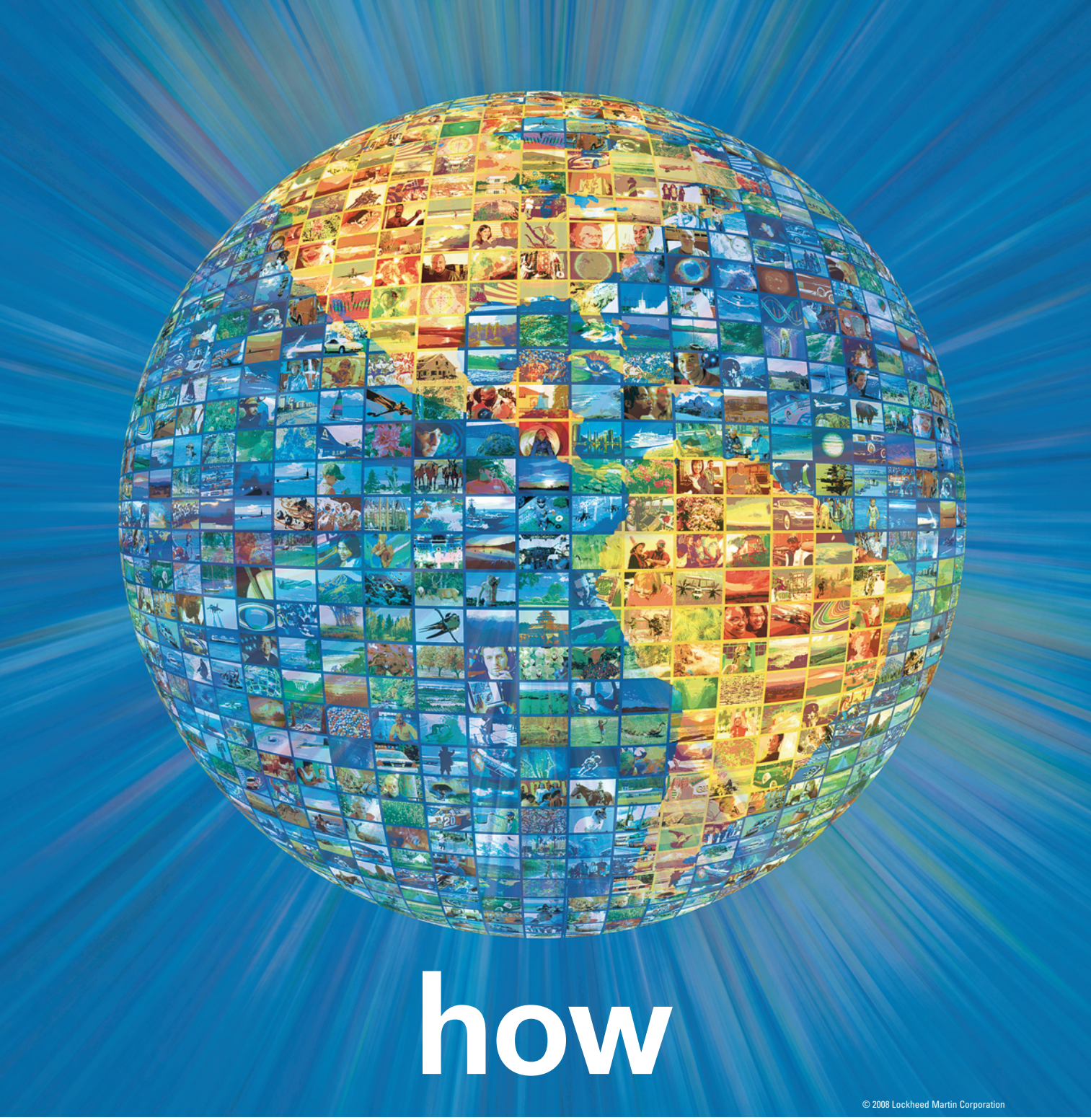
On the regulatory side of the equation, SATELLITE 2008 provided the stage for a celebration of industry-wide cooperation at last year's World Radio Conference in the rescue of C-band allocations that have been the backbone of the satellite-enabled marketplace for decades. On related fronts, challenges related to International Traffic in Arms Regulations requirements and other regulations were dissected and analyzed.

SATELLITE 2008 participants across the board left Washington, D.C., feeling energized about the prospects for the world marketplace. ■



Photos by Lisa Czaplicki

Attendees at SATELLITE 2008 were able to conduct meetings as well as learn about the latest technology advances on the show floor, which featured more than 270 exhibitors and those able to carve out time to get away from the floor were able to listen to top industry executives discuss the latest market trends in 43 sessions throughout the week.



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Satellite Manufacturer CEOs
The Spacecraft Connection

BY GREG BERLOCHER

The global market for satellites is expanding and traditional manufacturers are facing new competition from Russia, China and India, a panel of representatives from Lockheed Martin, Space Systems/Loral , EADS Astrium, Boeing, Orbital Sciences and Thales Alenia said Feb. 27.

The executives from the major satellite manufacturers from around the globe discussed what the competitive landscape may look like in the future, challenges faced by satellite manufacturers today, how to remain in a leadership role and whether new market entrants represent a threat or opportunity.

A key message Mark Stewart, vice president of engineering and operations for Lockheed Martin, drove home throughout the "Satellite Manufacturer CEOs: The Spacecraft Connection" panel was the importance of reducing cycle time. Stewart noted that by optimizing processes, Lockheed Martin has been able to reduce cycle time to 21 to 30 months, but pointed out that a shrinking supply chain is a real threat to the industry and the competition of different manufacturers for parts can steal the gains they have fought so hard for.

Christopher Richmond, senior vice president of global communications for Orbital Sciences, concurred. "Driving down costs is important, but a bigger long-term challenge is the parts problem. The supplier base is still OK, but we have

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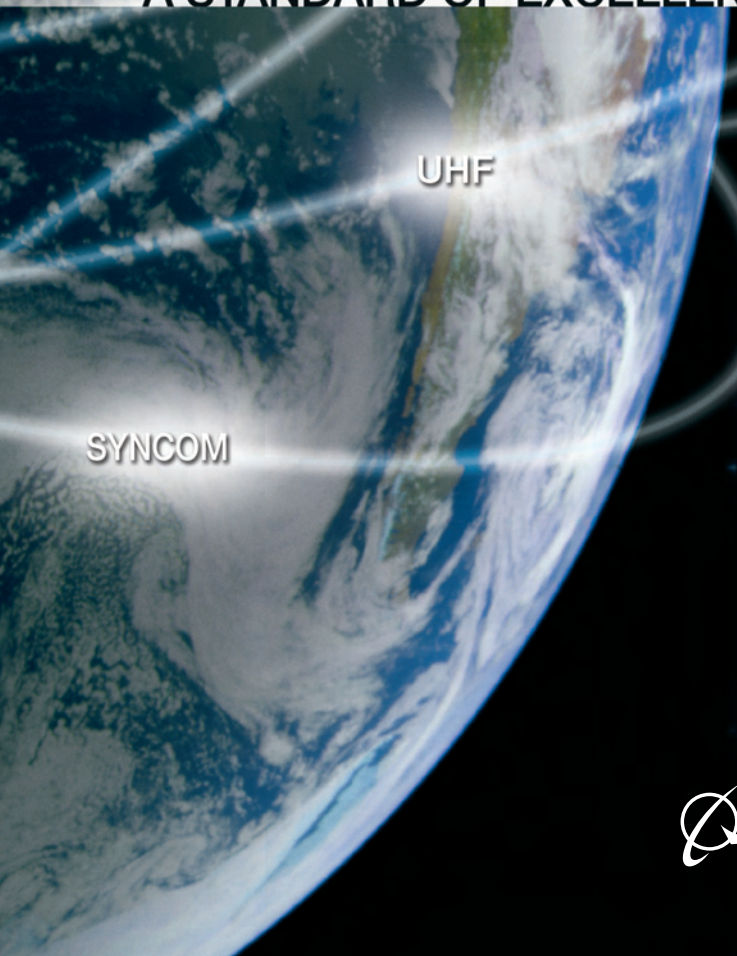

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a supply side management team to help grow the number of suppliers."

Patrick DeWitt, CEO of Space Systems/Loral, also talked about the problem of a shrinking supply chain. DeWitt explained that large numbers of engineers are retiring, and valuable manufacturing and testing processes have not been documented as well as they should have. In short, some manufacturers are having problems building equipment to the same quality that they did in the past. This puts pressure on the primary contractor to get the problem fixed. In one case, Space Systems/Loral provided a supplier 40 of it own engineers to help get the supplier back on track.

Evert Dudok, CEO of EADS Astrium, and Pascale Sourisse, president and CEO of Thales Alenia, both touched on the challenges the European manufacturers are facing due to the falling dollar. Dudok said that it is challenging to be profitable in light of the currency imbalance when comparing the dollar to the euro but that continuing innovation was the key to long term success. "We need to stay two steps ahead of the new entrants and continue to provide good value for the money," he said.

> **"Let American manufacturers utilize Long March rockets or prevent European manufacturers who sell to the U.S. government from using Chinese launch vehicles."**
>
> —DeWitt, Space Systems/Loral

Sourisse explained that a 110 to 120 exchange rate is acceptable but that a 150 exchange rate gave dollar-based suppliers a 20 percent to 30 percent price advantage. Due to this cost discrepancy, Thales Alenia Space works with low-cost suppliers in Russia, China and India that can develop reliable products.

To help lower the total cost of ownership of a satellite, Thales Alenia Space provides clients the option of launching on Chinese Long March rockets. This was a sore spot with DeWitt, who said, "U.S satellite companies are prevented from launching payloads on Long March rockets. We feel this is unfair and gives our European competitors an advantage. We want the U.S. government to know that we want a level playing field. Either let American manufacturers utilize Long March rockets or prevent European manufacturers who sell to the U.S. government from using Chinese launch vehicles."

Sourisse said offering a Chinese launch option is different than promoting the option. She noted that a very small percentage of their clients have actually been launched by the Chinese.

In response to a question about upward movement in satellite pricing, Stephen O'Neill, president of Boeing, said that satellite manufacturers have recognized that some contract terms are very onerous. O'Neill outlined an example where a satellite company could not fully recover the money associated with a satellite program for 15 years. "When the cost of money is factored in, it significantly changes the amount of risk we have to assume," he said. "These onerous terms have to change or there will be fewer competitors and prices will go up."

Sourisse had an interesting outlook on new market entrants from Russia, China, and India. "In the years to come, the competition from these areas will become stronger, but there will also be opportunities to use their core competencies," she said. "The emergence of new players will also allow new potential partnerships, thereby providing access to new markets and the development of new products."

As an example, Sourisse pointed to the 15-year relationship Thales Alenia Space has enjoyed with Russia. "We have built 17 satellites together," she said. "It is a huge opportunity for us and we are talking our relationship one step beyond. One recent example is a satellite based on the Spacebus platform that was totally built and integrated in Russia. We hope to be able to reduce the cost of the Spacebus 4000 platform through this relationship by focusing on common goals." ■

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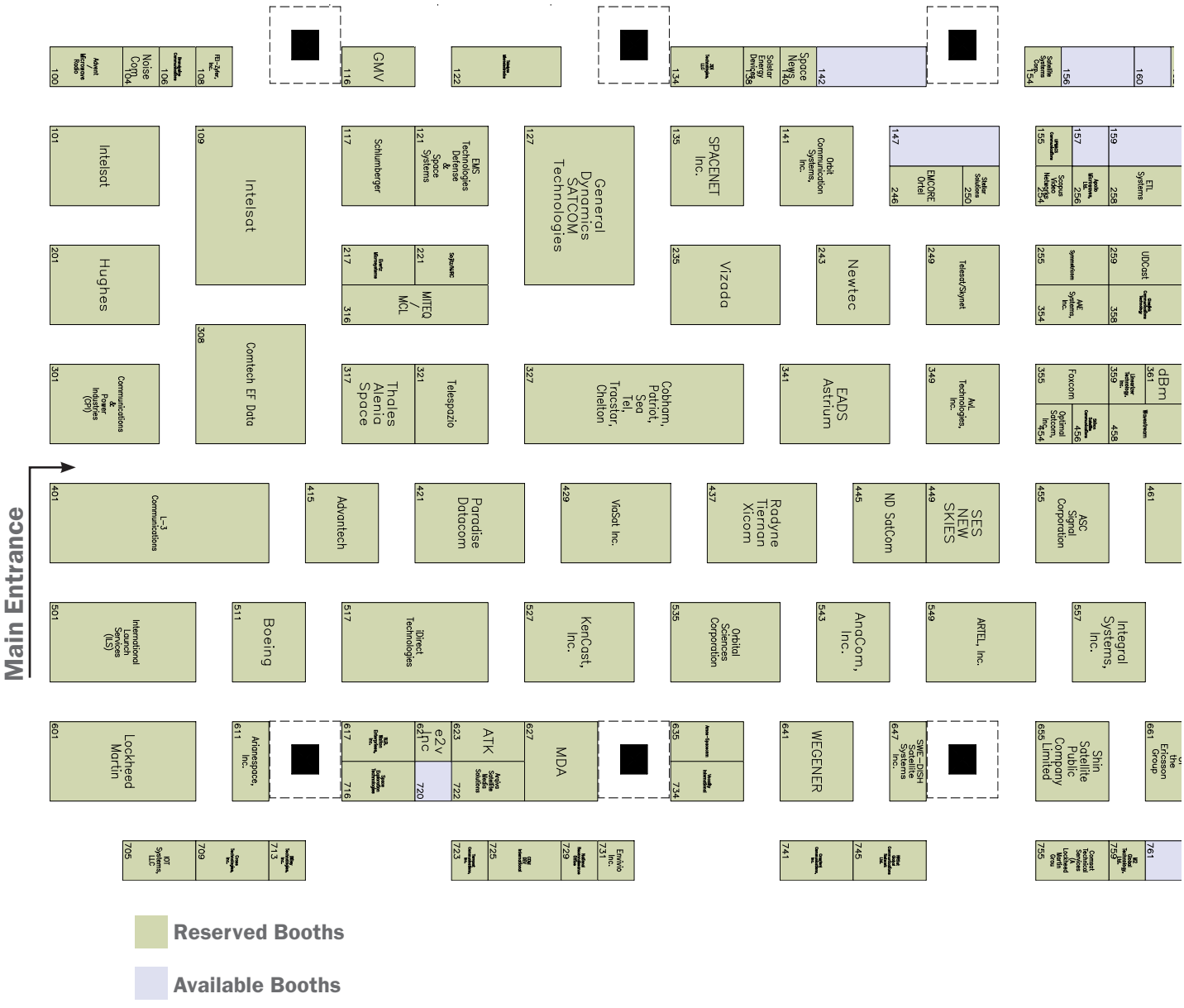

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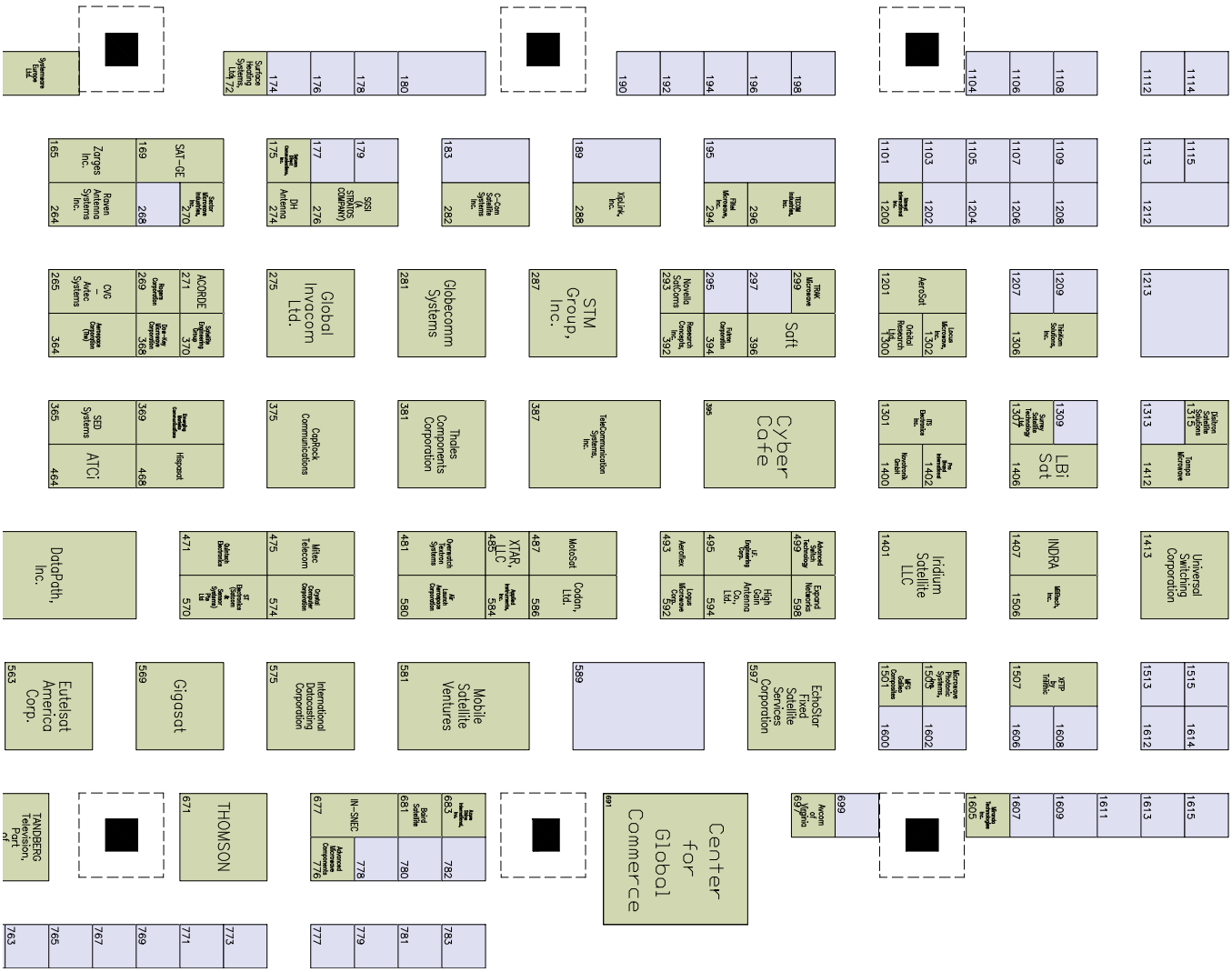

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Codan, Ltd.	586
COM DEV International	725
Communications & Power Industries (CPI)	301
Comsat Technical Services (A Lockheed Martin Grou	755
Comtech EF Data	308
Crawford Communications, Inc.	741
Cross Technologies, Inc.	709
Crystal Computer Corporation	574
CVG - Avtec Systems	265
DataPath, Inc.	461

COMPANY	BOOTH
dBm	361
DH Antenna	274
Disitron Satellite Solutions	1315
Dow-Key Microwave Corporation	368
e2v Inc	621
EADS Astrium	341
EchoStar Fixed Satellite Services Corporation	597
EMCORE Ortel	246
Emerging Markets Communications	369
EMS Technologies Defense & Space Systems	121
Envivio Inc.	731
ETL Systems	258
Eutelsat America Corp.	563
Evertz Microsystems	217
Expand Networks	598
FEI-Zyfer, Inc.	108
Filtel Microwave, Inc.	294
Foxcom	355
Futron Corporation	394
General Dynamics SATCOM Technologies	127
Gigasat	569
Global Invacom Ltd.	275
Globecomm Systems	281
Glowlink Communications Technology	358
GMV	116
High Gain Antenna Co., Ltd.	594
Hispasat	468
Hughes	201
I.F. Engineering Corp.	495
iDirect Technologies	517
INDRA	1407
IN-SNEC	677
Integral Systems, Inc.	557
Intelsat	101
Intelsat	109
International Datacasting Corporation	575
International Launch Services (ILS)	501
IOT Systems, LLC	705
Iridium Satellite LLC	1401
ITS Electronics Inc.	1301
KenCast, Inc.	527

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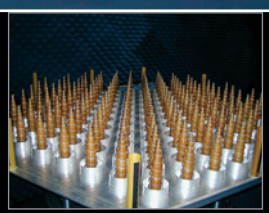

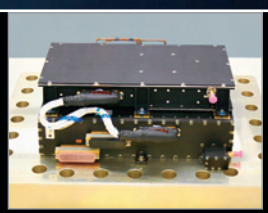

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COMPANY	BOOTH
L-3 Communications	401
LBi Sat	1406
Linearizer Technology, Inc.	359
Lockheed Martin	601
Locus Microwave, Inc.	1302
Logus Microwave Corp.	592
M2 Global Technology, Ltd.	759
MDA	627
MFG Galileo Composites	1501
Microwave Photonic Systems, Inc.	1503
Millitech, Inc.	1506
Miranda Technologies Inc.	1605
Mitec Telecom	475
MITEQ / MCL	316
Mobile Satellite Ventures	581
MotoSat	487
National Reconnaissance Office	729
ND SatCom	445
Newtec	243
Noise Com	104
Norsat International Inc.	1200
Novella SatComs	293
Novotronik GmbH	1400
Optimal Satcom, Inc.	454
Orbit Communication Systems, Inc.	141
Orbital Research Ltd.	1300
Orbital Sciences Corporation	535
Overwatch Textron Systems	481
Paradise Datacom	421
Pro Brand International	1402
Quintech Electronics	471
Radyne Tiernan Xicom	437
Raven Antenna Systems Inc.	264
Research Concepts, Inc.	392
Rogers Corporation	269
RRSat Global Communications Network Ltd.	745
Saft	396
Satcom Direct Communications, Inc.	175
Satellite Engineering Group	370
Satellite Systems Corp.	154
SAT-GE	169
Schlumberger	117
Scopus Video Networks	254
Sector Microwave Industries, Inc.	270

COMPANY	BOOTH
SED Systems	365
SES NEW SKIES	449
SGSI (A STRATOS COMPANY)	276
Shin Satellite Public Company Limited	655
Shiron Satellite Communications	456
Sojitz/NJRC	221
Solstar Energy Devices	138
Space Exploration Technologies	716
Space News	140
SPACENET Inc.	135
ST Electronics (Satcom & Sensor Systems) Pte Ltd	570
Stellar Solutions	250
STM Group, Inc.	287
Surface Heating Systems, Ltd.	172
Surrey Satellite Technology Ltd.	1307
SWE-DISH Satellite Systems Inc.	647
Symmetricom	255
Systemware Europe Ltd.	162
Tampa Microwave	1412
TANDBERG Television, Part of the Ericsson Group	661
TECOM Industries, Inc.	296
TeleCommunication Systems, Inc.	387
Teledyne Microelectronics	122
Telesat/Skynet	249
Telespazio	321
Terrasat Communications, Inc.	723
Thales Alenia Space	317
Thales Components Corporation	381
ThinKom Solutions, Inc.	1306
THOMSON	671
TRAK Microwave	299
UDCast	259
Universal Switching Corporation	1413
UPMACS Communications	155
ViaSat Inc.	429
Vizada	235
Vocality International	734
W.B. Walton Enterprises, Inc.	617
Wavestream	458
WEGENER	641
XFTP by Trilithic	1507
XipLink, Inc.	288
XTAR, LLC	485
Zarges Inc.	165

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Sound Architecture Needed
For Military Procurement, Chief Says

BY LINDA THORNBURG

The U.S. military needs technology that will help it wage war today and in the future over broad areas, Col. Patrick Rayermann, chief of the U.S. Army's Space and Missile Defense Division, said Feb. 27 at SATELLITE 2008.

> What is needed is an overarching architecture that gives both those who acquire military technology and those who provide it a clear sense of the mission and direction.
>
> —Rayermann, U.S. Army

The military needs to have capabilities for communicating among troops and commanders that make it seem as if they are operating during the 19th century — when battles took place in a much smaller arena and a courier could ride from one battalion to another with ease, Rayermann said during the "Comms on the Move (COTM): Defining the Military Requirement" session. With few people covering hundreds of square miles and coordinating from disparate locations today, the military needs common maps with the same symbology; videoconferencing and other sophisticated communications on planes, tanks and ships; and the ability to look other commanders in the eye and read body language over long distances to make sure everyone understands each other.

That vision is the essence of what the military is looking for with net-centricity — the same fidelity, synchronization and commonality of understanding that was used in battlefields when soldiers fought side by side, said Rayermann.

When representatives from DataPath, L-3 Communications, Boeing and Raytheon articulated their belief that the government needs to be shrewder, more efficient and more standardized in the way it acquires military communications technology, Rayermann said the problem is that the government is not really only one government but is made up of Congress, the executive branch and the different branches of the military, which all have different needs and requirements, and also different acquisition processes.

What is needed, said Rayermann, is an overarching architecture that gives both those who acquire military technology and those who provide it a clear sense of the mission and

direction. This architecture should help everyone understand who needs the information, how it flows and what kinds of timelines are important. When that is clearly understood, the way that goal is accomplished is less important, he said.

Vendors complained that the military does not allow it to provide solutions rather than technology per se and retains too much control of the specific technology, which is often outdated by the time the procurement process is completed. Rayermann responded that vendors that provide consistently high quality and reliability have more leeway than those who do not, but because lives often are at stake, the military will never give up as much control as vendors might wish, he said.

While the military gets warfighter tools, soldiers and commanders do not have everything they need as quickly as they need it, Rayermann said. The amount of information they can pass on is still constrained by bandwidth.

Referring to the possibility that the Transformational Satellite Communications System will not be funded by 2015, Rayermann said that with a sound architecture, how military needs are met can change. Some needs originally designated to be addressed by military technology can be addressed, if the funding for that technology is not there, with commercial solutions. It is time the military admitted that commercial satellite services are part of the military's toolkit and have been for a number of years, he said.

Rayermann said that while soldiers in the field don't all need 2 megabits of bandwidth, the current generation of recruits is accustomed to being connected. If the military doesn't provide the same connectivity that young people get in civilian life, it will have trouble recruiting new personnel, he said. ■

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Satellite Broadband Market
Beginning To Show Signs Of Strength

BY JESSICA PEARCE

Satellite broadband has finally found market success, with offerings by WildBlue and Hughes reaching thousands of customers in North America and a recent deal struck between ViaSat and Eutelsat to launch an all Ka-band satellite over Europe.

Satellite executives whose companies have pioneered the use of satellite broadband say this is just the beginning, and advances in technology and expansion around the world are going to build the industry to greater heights.

"There are two promising market perspectives — commercial broadband market access and institutional/military broadband," Blaise Jaeger, executive vice president for Thales Alenia Space, said Feb. 27 during SATELLITE 2008's "Satellite Broadband: Is Ka-Band the Way to Grow?" panel. "Commercial [service] is price sensitive, and you have to think about capacity, multi-spot frequency reuse and the antenna pointing system. Satellite broadband will be a compliment, not a substitution, to wired and wireless terrestrial. Institutional [service] can be a complement, not a substitution, to protected anti-jamming services. Instead of being price sensitive, institutional broadband is more performance demanding, you have to think about mesh, flexibility and on board processing."

> "We can do Internet, intranet and send video to troops in theater. It may call for differnet solutions than we use in the commercial sector."
>
> —Saint-Aubert, EADS Astrium

Jaeger pointed to the satellite Thales is building for Yahsat as an example of a satellite being built for commercial use but which could be used by the defense industry as well. "Yahsat is a dual-use system addressing both the defense and communications market," he said. "The defense is more in the Ka-band. We also see communications applications as a complement to terrestrial solutions. Broadband can serve as a complement to anti-jam. The satellite meets some defense requirements as well."

Phillipe Saint-Aubert, senior vice president for EADS Astrium, agreed that the military segment will play a large part in the future growth of the satellite broadband market but also said not to overlook other markets.

"I do not believe that satellite broadband will compete head to head against terrestrial solutions, but I do believe that it can complement terrestrial solutions," Saint-Aubert said. "Europe is a much more fragmented market. We see a strong prospect for business success there.

"Another segment is the military," he said. "Yahsat is one example of how we can produce Ka-band for that market. We can do Internet, intranet and send video to troops in theater. It may call for different solutions than we use in the commercial sector."

One of the biggest problems facing satellite companies who want to work in Ka-band is the lack of capacity. WildBlue, which provides broadband Internet access for customers in the rural United States and Canada, announced last year that it had sold out capacity in some regions, a nice problem to have, according to John Celli, president and CEO of Space Systems/Loral, but one which presents its own problems to the industry.

"I was very proud to see the words sold out applied to the satellite [WildBlue-1], and I believe WildBlue will overcome that," Celli said. "[Shin Satellite's] IPStar is the largest commercial satellite up in space, and it has been very successful in certain areas. The industry is facing internal dropping in prices as well as some difficulties such as regulatory issues. Business is increasing but it's increasing slowly, and I hope they can overcome that.

"One of the issues that this industry still faces is that once the satellite is in the air,

you still have to have equipment that you can distribute fast enough to keep the interest high," he said. "Demand is going to grow. In some cases it's not just an appetite for browsing but for culture."

One of the most pervasive attitudes about satellite broadband Internet is that it can only serve as a complement to terrestrial options like cable, fiber or DSL. Mark Dankberg, chairman of ViaSat, said that attitude might be worth revisiting. "With [us] and Eutelsat, one of key issues was flexibility and capacity," he said. "We thought, 'It is absolutely crazy to try to sell to the urban market that has access to cable or modem.' Go for the unserved market. What we think is that we can put up a satellite that can serve a million or two. We created awareness and the market grew. What we also think is that one of the things we can offer is higher speeds. One of the things we hope to learn with Ka-Sat is whether people who have poor cable or DSL would sign up for satellite broadband. That market would be 20 or 30 million customers."

Even with the planned launch of several more Ka-band satellites in the coming years, each satellite has a somewhat limited lifespan. Panel moderator D.K. Sachdev asked the executives about the future, when subscriber numbers hopefully will be higher but capacity and orbital space more limited.

"You can say, 'It's impossible. I give up.' and hold your level of service for n years as customers become less happy and your service becomes less effective," said Dankberg. "Another way is to think of satellites another way. Think of what is the life of your assets? Is the life of a satellite 15 years? You have to have a business plan that takes into account that you're not going to have the same amount of customers 15 years from now."

Paul Gaske, Hughes Network Systems executive vice president, said the satellite industry has proven that it knows how to think ahead.

"If you start thinking about how 10 years ago we didn't think we could do that," Gaske said, "10 years from now we'll do better." ■

Panel Explores Business Models For Mobile TV

BY LINDA THORNBURG

The right business models for mobile TV are still uncertain, but they might include packaging the service with home television or car navigation systems, executives said.

> "High-quality video on a bigger screen ... looks good and is fun to watch. In a mobile environment it can be a compelling product. — a marriage of car and TV."
>
> —Zufall, ICO

The package that includes mobile TV could be presented in many ways, panelists agreed. It could include voice, Internet and TV. It could be added on top of an IP offering. It could be added to fixed TV service. While the possibilities for capturing ad revenue may not seem obvious today, it is possible that personal advertising targeted directly at the specific consumer who owns the handset could occur eventually, because cell phone providers have a lot of personal information about their customers.

"The key to the business model starts with demand," David Zufall, senior vice president of network systems, ICO, said during the "Mobile TV: The Role for Satellites in an Increasingly Hybrid, Multimedia World" panel. "With little screens there is a question of demand, but when we can show high-quality video on a bigger screen it looks good and is fun to watch. In a mobile environment it can be a compelling product —a marriage of car and TV."

In Korea, between 8 and 9 million handsets that offer mobile TV have been sold, with most of these offering free service. "This was a surprise to us, as was the viewing time," Zufall said. "The feedback we have is that it is about an hour a day for all users on average, and in cars, two hours a day. They can watch while driving, which not easy to replicate in all countries in world, obviously, but there is more than I would have expected in terms of consumer appetite. "

For this service to really catch on around the globe, Zufall sees GPS devices and in-car reception becoming a significant part of the market. "You can't just say put a screen in the car, even though that could be a compelling start point," he said. "In our product, we're looking at navigation and two-way communication to get the right mix of compelling services."

S2M plans to launch a satellite that will provide service to North Africa and is fully committed to mobile TV, said Wejdi Harzallah, vice president, commercial operations, S2M. "That's our bread and butter and we believe there is a bright future there," he said. "We need to create the demand for mobile TV, not just put regular channels on, but we need to create interactive content that is specific for mobile to make it work."

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provide a portion of the revenue stream, but not at the outset of the industry, said Harzallah. "We have to go to paid TV to start with and build the industry, and when advertisers see they can only buy that audience with mobile TV, they will allocate dollars to it," he said. "A business case without advertising is possible, for a certain penetration rate. Then advertising might have to take over to allow for lower prices. When we have a viable business case, we can reduce the price and get higher penetration.

Harzallah sees the market split into two groups — active viewers that will download movies and DVDs and know what they want to watch and passive viewers who "will buy a mobile phone and watch TV in the airport to kill time. There is a need for devices for both these groups and for those in between," he said. "Some viewers will need large screens because they like multimedia as part of their phone. We can serve different groups with the same platform. Some will need interactivity but we can also have devices without it. By having the right chips, you can have interactivity."

The fact that advertisers may not pay for mobile TV users at the beginning should not bother the emerging industry, said Patrick Grillo, sales director for UDCast. "They didn't do a lot to do with Internet either, at first. Then they saw an economic opportunity."

Adoption of the technology also will be affected by the viewing habits of the various populations around the globe. In Europe, for example, there is a contrast between the United Kingdom and France in terms of viewing habits. "In England, as in the United States, it is perfectly acceptable to a plan a social night around the TV, but this is not true in France," said Grillo. "People classify the acceptability of advertising on the medium they are receiving their television on," he said.

Eutelsat has payloads coming into orbit next year in Europe, said Yves Blanc, Eutelsat's director, strategic planning and institutional relations. "There is no doubt we won't roll out the content ourselves. Who will be the terrestrial players and many other questions still have to be answered," he said.

The payload is being developed in conjunction with SES, and "a key point is distribution partners," said Blanc. "What is their vision? We tried to be as flexible as possible. The market is fragile now. We are talking to most players in the market — telcos, content providers, TV boutiques." ■

AD INDEX

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At Sea Or In The Air
Satellite Users Want A Good Deal

BY SAM SILVERSTEIN

Broadband service at sea or on a transoceanic flight may be remarkable feat made possible only by cutting edge satellite technology, but in the end, users care only that it works and that the price is right.

That was the word at a Feb. 27 panel discussion about the future of go-anywhere broadband technology as satellite systems continue to evolve.

"People don't want to worry about how it's happening," but they expect that they will get a level of service that matches the environment where they happen to be, Ian Palmer, executive vice president of satellite sales at KVH Industries Inc., said during the "Delivering Broadband Anywhere: The Next Generation of Mobile Satellite Communications" panel. This means that satellite companies must work hard to ensure they provide robust connections at affordable price points — and avoid burdening customers with the specifics of how the data travels, he said.

"Customers say they want to replicate what they get in the office," Palmer said. "We have to meet or beat their expectations for the speed they want and get close to their price targets."

Users also want equipment to fit their specifications, Palmer added. "They have an idea of how big it should be, and if you're outside that realm they're not going to buy it."

The sense among customers that satellite companies can provide service in the air or at sea that is comparable to what they can get on land poses a big challenge to the satellite industry, said Gary Hebb, vice president of EMS Satcom. People are used to low prices for bandwidth, but today's satellites are not designed to provide inexpensive connections.

"Satellite communications is a real expensive means of communications," Hebb said. "You have to respect that."

Customers who use mobile satellite services to connect to the world from a boat or plane also want equipment and service that works seamlessly no matter where they are, said Greg Ewert, executive vice president of marketing and business development for Iridium Satellite, which operates a global fleet of satellites that provide coverage of virtually the entire planet.

Satellite firms are striving to find ways to create packages of hardware and services that can fulfill customer expectations for transmission speed and cost effectiveness, said Marcus Vilaca, chief scientist at Inmarsat. But there is no magical way to give satellites the level of capacity that make ground networks so efficient and drive the perception that connectivity should not cost a lot, he said.

"This will always be a niche market. We're just trying to make a very big niche market," Vilaca said.

Vilaca pointed out that prices have come down considerably over the years. The long-defunct Inmarsat A data service has given way to systems like Inmarsat's newer Broadband Global Area Network service, which offers faster speeds at lower costs. Moreover, customers sometimes are less concerned about the price of a call or transmission, such as when they have to make an essential phone call or must transmit critical information that cannot wait.

EMS has found that users tend to base their expectations based on where they are, said Hebb. A user on a yacht probably will want a satellite link that it similar to what they would be able to get at home, but a person using a handheld unit on a plane might be satisfied with the level of service they are used to on a cell phone, he said.

Roger Rusch, an industry consultant who heads TelAstra Inc., said satellite companies are operating against a backdrop of rapidly increasing demand for bandwidth. Many customers have simply come to expect faster and faster data connections wherever they happen to be, he said.

One trend that is working in the satellite industry's favor is that application developers are focusing on producing products optimized for mobile devices, such as cell phones, said George Spohn, vice president of North American sales and marketing for Thrane & Thrane. This focus on bandwidth efficiency promises to benefit satellite providers by allowing customers to make better use of scarce transponder capacity, he said. ■

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