

Channels

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Top: Ken Howard © BMP
Bottom: Darke Rotach © BMP

Digital Communications Out of the Blue

At theaters around the world, the wildly popular Blue Man Group mixes music, comedy, and multimedia theatrics to produce a unique form of entertainment in its shows and concerts. In fact, a trademark of Blue Man Group is its innovative use of cutting-edge technology and media to excite audiences worldwide and deliver an experience like no other.

As a recent case in point, Blue Man Group is now employing a multi-channel digital media system from Helius, a Hughes company, to communicate with its audiences. Initially Blue Man Group had used the Helius system in its Las Vegas theater's Green Room, a staging area for performers, to communicate upcoming events and up-to-the-minute information to employees. But after seeing its

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HUGHES QUICKTAKES

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Executive Corner

The Amazing Chip

**By John Corrigan,
Senior Vice President of Mobile
Satellite Engineering**



At Hughes, not only are we the world's leading provider of broadband satellite solutions and services, but we

also design the key components and systems that make these possible. Few pieces of technology are as critical to our success as the integrated circuit, or "chip." This tiny, complex device sits inside every one of our products and makes it do what it does. It's amazing to realize that when we develop our own custom integrated circuits, we're packing literally hundreds of person-years of technology and market know-how into something smaller than a postage stamp and costing just a few dollars or less. This ability to create devices with ever-greater functionality and lower cost, that are ever smaller and consume less power, is what ultimately gives us our competitive advantage in the marketplace.

System on Chip

Ten years ago, we developed our first System-on-Chip (SoC), nicknamed Gemini, for the mobile satellite phone market. By incorporating all of the required processors, memory, and logic circuits into a single mass-produced device, this custom

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Digital Communications Out of the Blue

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effectiveness for internal communications, Blue Man Group realized that the system would also be an excellent method to communicate with customers about special events, important information, and special offers related to the show. So the group added customer-facing digital signage in the main lobby of the theater to announce meet-and-greets with performers, showcase footage from the show, and alert customers about filming or photographing during a particular show.



"We have been very satisfied with the Helius experience," said Chris Nelson, managing director, Blue Man Group Las Vegas. "The Helius system has been integral to easy communications with our employees and customers, and it allows us to provide the most up-to-date information about the show."

The Helius MediaSignage platform provides the hardware and software for companies to easily meet their corporate

communications and digital signage needs. From the ability to create and manage playlists, to specific scheduling of video and data content on individual screens, Helius provides the tools to effectively communicate with employees and customers through compelling visual displays.

According to Jeff Crapo, senior vice president of marketing and business development for Helius, "Helius technology opens the doors to presenting the right message, to the right audience, at the right time."

The right timing—now that's something the outrageously talented Blue Men know a thing or two about. ■

Hughes Financial Corner

Ticker: HUGH (NASDAQ)

Hughes Communications, Inc. announced strong second quarter growth in North America and International Services, and record second quarter adjusted EBITA.

Snapshot of Second Quarter Financial Results

- Revenue of \$256 million compared to \$266 million in the second quarter of 2008; 1% decline on a constant dollar basis.
- Record second quarter adjusted EBITDA of \$40.4 million, an increase of 8% over the second quarter of 2008.
- Consumer business continued impressive growth with new highs, including record second quarter subscriber gross adds of approximately 50,000, an increase of 35% over the second quarter of 2008, and subscriber net adds of 18,000 for growth of 103% over the second quarter of 2008.
- New orders of \$326 million, an increase of 50% over the first quarter of 2009, with major orders from BP, GTech, Barrett Xplore, Conoco Phillips, National Cinemedia, Siemens, Telemar and Telefonica Brazil, Camelot, SCT Mexico, Bank of India, Terrestar, SkyTerra, and Harris Corp.
- Net loss of \$47.7 million due primarily to certain impairment losses, including a \$44

million one-time charge as a result of Chapter 11 filing by Boeing's Sea Launch.

Snapshot of Financial Results for Six Months Ending June 30, 2009

- Revenue of \$496 million compared to \$503 million in the six-month period ending June 2008, which corresponds to 2% growth on a constant dollar basis.
- Services revenue up 13% over the six-month period ending June 2008, 17% on a constant dollar basis.
- Adjusted EBITDA of \$73 million for a growth of 9% over the six-month period ending June 30, 2008.
- Total subscribers of 473,000 on June 30, 2009 reflecting a growth of 15% over the subscriber count at June 30, 2008.
- Strong non-consumer backlog of \$879 million on June 30, 2009, an increase of 9% over the backlog at March 31, 2009.

For up-to-date news, financial information, audios, and videos, visit www.hughes.com/investor.

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About Hughes

Hughes Network Systems, LLC (HUGHES) is the global leader in providing broadband satellite networks and services for large enterprises, governments, small businesses, and consumers. HughesNet® encompasses all broadband solutions and managed services from Hughes, bridging the best of satellite and terrestrial technologies. Its broadband satellite products are based on global standards approved by the TIA, ETSI and ITU standards organizations, including IPoS/DVB-S2, RSM-A and GMR-1. To date, Hughes has shipped more than 1.9 million systems to customers in over 100 countries.

Headquartered outside Washington, D.C., in Germantown, Maryland, USA, Hughes maintains sales and support offices worldwide. Hughes is a wholly owned subsidiary of Hughes Communications, Inc. (NASDAQ: HUGH). For additional information, please visit www.hughes.com.

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The HUG:

Hughes Customers Forge Relationships and Drive Innovation

The annual meeting of the Hughes Users Group, affectionately known as the HUG, is always a lively one, and the scene at HUG 2009 just outside Las Vegas in May was no exception. The HUG is all about leveraging customer knowledge, ideas, and experience to help Hughes better meet their needs and in turn to help customers get the most out of Hughes products and services.



Among many stimulating topics and activities, this year's meeting included a tour of the Hughes Las Vegas network operations center and presentations on distance learning and the customer gateway. A special highlight was learning how America's Emergency Network uses the advanced capabilities of Hughes' SPACEWAY® 3 satellite system, including bandwidth on demand. But, as in prior years, the real heart of the HUG lies in the roundtable sessions where members discuss common issues and successes.

Building Partnerships

According to Tom Peake, president of HUG and director of Data Center Services for American General Finance, "The partnerships that we build with the other attendees who come year after year are invaluable. We often share mutual problems and we're able to trade



"The bottom line is that the Hughes executive team really listens to what customers have to say and acts on it."



**—Ian Hyatt
GTECH**

insights back and forth as to how we fixed particular problems."

Ian Hyatt, senior director for the National Response Centers of GTECH Corporation agreed, "One of the most beneficial aspects of the HUG is resolving issues before they become issues. We talk to companies that are facing challenges we've not yet experienced, and we can make adjustments to the way we operate to ensure we don't trip over the obstacles that others have found for us."

Solving Issues and Driving Innovation

An integral part of the annual HUG meeting is the "issues list," a report of common issues coupled with the direction that the team recommends Hughes takes during the coming year. The list may include topics such as installation and

maintenance, operations support, and engineering. The Hughes team takes that list back to the office and the lab, addresses each topic, and communicates updates and activities to all members.

"The bottom line is that the Hughes executive team really listens to what customers have to say and acts on it," said Hyatt. "The theme of HUG is Talk, Listen, Learn, and all three are right on the money. There are no barriers to communication with Hughes executives, and it's a great way to stay abreast of what's happening in the industry."



Not Yet a Member?

Being active in the HUG is the best way for enterprises to exchange information, prepare for network upgrades, and explore service expansion.

"For any customer who has not attended this event, I would strongly recommend that they attend to stay in touch—not only with Hughes, but with other customers," urged Hyatt. Added Peake, "The more participants we have, the more issues are raised, the more relationships are bonded, and that benefits the entire group."

The next HUG meeting is scheduled for April 25-28, 2010 in Tampa, Florida. For more information about participating in the HUG, contact your Hughes program manager. ■



Broadband in Rural SPAIN



In rural Spain, as in many rural locations around the world, provisioning broadband service is not economically feasible using terrestrial technologies such as cable or DSL. But now, thanks to Telefonica España and Hughes Europe, people living and working in rural and remote areas of the country can access broadband communications for the first time.

In a project completed earlier this summer, Hughes Europe implemented the rollout of a high-quality HN System solution for Telefonica España to deliver satellite-based VoIP (voice over IP) rural telecommunications services, successfully meeting very tight deadlines imposed by the Spanish authorities. This rural network installation by Hughes is just the latest project in a longtime relationship working with the Spanish telecom giant.

The new network comprises more than 8,000 terminals for residential, small/medium enterprise, and local government customers. Based on the proven, highly successful HN System platform, it incorporates dedicated VoIP equipment, including IP gateways and voice servers, and shares resources with other Hughes satellite-based networks. For Telefonica, the Hughes solution offers the ideal combination of cost-effective equipment performance, lower operational cost, and comprehensive ongoing support.

"The rapid implementation of our HN satellite-based network enables Telefonica to provide a high-quality and cost-effective communications service to meet its Universal Service Obligation under Spanish law," said Christopher Britton, managing director of Hughes Europe.

The new communications services are made possible through the installation of a switching center that interconnects the rural satellite VoIP network to the national Spanish telephony network. Telefonica's new offering serves both new and existing customers, the latter migrating from the existing TRAC network (Telefonía Rural de Acceso Celular—Rural Telephony with Cellular Access) to the satellite-based VoIP network.

"Our relationship with Telefonica reflects a broader total commitment to our customers, solving often-complex technical problems in providing tailored solutions that are both proven and cost-effective," added Britton.

Now, even in rural and remote mountain areas of Spain, customers can rely on service from Telefonica España to enrich their lives with all the benefits of broadband, including high-speed Internet access, voice/fax services, and emergency communications. ■

Broadband Harmony at Harmony Ridge Farms



Back in 1999, when they were introduced to alpacas at the Ohio State Fair, Jeff and Marie Bradford never dreamed that the South American-bred animals would one day become their livelihood.

Fast forward to today. On a 200-acre property set among the rolling hills of Southern Ohio, Harmony Ridge Farms is home to both the Bradfords and more than 40 alpacas. The couple raises the alpacas, enters them into competitions, and sells both the animals and their fleece. Fibers from the Bradford's alpacas end up in many finished products such as blankets, mattresses—and even as a lining for the ultimate blue jeans.

A Growing Business

The Bradfords rely on the Internet for virtually every aspect of their business: managing livestock purchases, registering for shows, organizing deliveries, and handling countless other business tasks. However, according to Marie, "The hilly, rural setting is perfect for the animals, but not so good for Internet access."

Since Harmony Ridge Farms is located beyond the reach of cable or DSL, the Bradfords thought that dial-up was their only option for Internet access. But the clunky dial-up service

quickly presented challenges. So when the couple learned about HughesNet® Business Internet service by satellite, they decided to give it a try.

HughesNet offers a full suite of services designed to help businesses like Harmony Ridge Farms thrive. The seven HughesNet Business Internet plans can also be customized to include

private networks and backup solutions, and offer download speeds up to 5 Mbps—the fastest satellite Internet access available in North America.

"Set-up was easy," said Jeff. "The installers were done within an hour." Their new HughesNet service quickly enabled the couple to streamline communications with customers and suppliers, build a dynamic Web site, and create a presence at online livestock auctions.

As their business needs evolved, the Bradfords began to rely more and more on high-bandwidth applications, such as using streaming video to monitor online auctions. And as Harmony Ridge began to attract more interest through its Web site, the couple realized they needed higher speeds to expand their online capabilities. "Changing plans just took one phone call to Hughes and the next day we had faster speeds than ever before," said Jeff.

In February 2009, after a blustery ice storm knocked out power and phone lines, the Bradfords' HughesNet service came back quickly, and they were able to let family, friends, and business contacts know that all was well. It was seven days before the phone lines were back, but they were able to use their HughesNet service to continue operations.

Reliable Connectivity Makes All the Difference

"Running a business from a rural community is really tough, but over the past few years we've realized that a good Internet connection can make it a whole lot easier," added Jeff. "We're constantly reaching out to potential customers through email and inviting people to visit, so it's really necessary that we have a reliable, high-quality connection. We're glad we've found that with Hughes."

Jeff's advice for other small businesses? "If you're trying to run on dial-up, you're back in the dark ages. You need to get HughesNet and you need to get started now."

Today, knowing that their HughesNet service is reliably taking care of their business Internet needs, the Bradfords are busy tending the farm—adding alpacas to their herd, attending competitions—and setting their sights on winning a few blue ribbons. ■



"If you're trying to run on dial-up, you're back in the dark ages. You need to get HughesNet and you need to get started now."

— Jeff Bradford



The Customer Is Our Business

***A Sneak Peek at
the State-of-the-art
Customer Service
Supporting HughesNet
North America
Consumer and
Small to Medium
Business Customers***

HughesNet® customers enjoy the richness of a high-capacity, high-quality broadband service with the fastest Internet speeds available by satellite. And when an occasional blip in service occurs, help is just a phone call away—or an email, a fax, or even an online chat.

"We're focused on delivering top-quality customer service designed to meet a wide range of customer requests on a consistent basis," said Deanna Matsumoto, vice president of customer service for HughesNet North America consumer and small/medium business customers.

Service with a Smile

More than 750 customer service representatives operating from centers in the U.S., India, and the Philippines serve HughesNet North America customers around the clock, handling a variety of inquiries that range from questions about a bill to reporting an interruption in service. Representatives use multiple tools to resolve problems, escalating calls to a higher support tier if additional help or specialized services are required.



Representatives stay in touch with the customer until each problem is resolved. When appropriate, customers are notified of events through an interactive voice response (IVR) system and the Hughes Customer Care Web site. Using call-back and auto-dialing services, agents acknowledge customer calls and keep customers advised of ongoing work on any outstanding issues.

Intelligent Interactive Voice Response

Hughes is continuously looking at ways to improve processes to make it easier for customers to do business with the company. For example, the sophisticated IVR hosted by Hughes has embedded intelligence coupled with key self-service functions. When a customer chooses the technical support option, the system automatically performs service diagnostic routines and provides the customer and the agent with key information regarding the health and warranty status of the customer's service. At any point during the call, the customer can opt to speak with a fully trained, live service representative.

A Change of Pace

But not all calls in Hughes call centers are inbound. In its goal to create a positive experience from the very beginning, the company places welcome calls to new customers, providing helpful information such as the top three reasons most new customers contact customer service.

The Hughes customer service operation also reaches out to customers with its TACT (Thank the Customer Today) program. Representatives periodically call hundreds of customers selected at random to simply thank them for their business. No sales pitch—just a thank you.

Hughes takes customer satisfaction very seriously. Perhaps that's why the customer service organization holds a low five-percent abandon rate, which refers to the percentage of callers that hang up before a call is completed. And according to customer ratings from post-call surveys, customer satisfaction percentages are continually improving.



Customer Advocacy

"We're the advocate and the voice for our customers throughout the company," said Matsumoto. Through the Hughes Customer Advocate Program, a selected group of customers tests new services and features, providing valuable information and feedback before the services are released—further building customer satisfaction.

"The customer is the lifeblood of our business," added Matsumoto. "Without the customer we don't have a business, so it's vital that we work proactively to prevent problems and effectively address any issues that arise."

That's why for the more than 750 representatives supporting North America's HughesNet consumer and small/medium business customers, business is truly all about top-quality service. ■



Cotton Gins & Broadband

There are few things softer than a fluffy, all-cotton towel or shirt. But it takes a long journey to get the cotton from the farmer's fields all the way to a manufacturer's finished product. An important stop along the way is the ginning process, which involves taking seeds and trash out of the cotton, baling it, and sending it to a mill. The bales then become a commodity regulated by the United States Department of Agriculture (USDA).

Producers Gin Company based in Theodore, Alabama relies on the Internet to transmit official electronic warehouse receipts to the USDA. Since the company is located in a rural part of the state without access to DSL or cable, Producers Gin initially settled for a dial-up Internet connection to transmit the receipts. But doing business over a phone line with speeds of only about 12 kbps simply didn't work.

According to office manager Georgi Starr, "On dial-up, it would take us three days to transmit a receipt, and the file transfer would usually end up timing



out. So not only did we tie up our phone line, but we risked getting written up and fined by the USDA if we couldn't transmit properly."

Then, in the aftermath of Hurricane Katrina, things got worse. "To get work done, I actually had to put everything on a disk and drive to the house of a friend who had DSL," added Starr. "And we were still issued a warning by the USDA because of late transmissions. That's when I knew we needed a change."

Streamlining Business Operations

So Producers Gin decided to upgrade to HughesNet® Business Internet service by satellite to ensure that its growing business would have consistent, high-quality connectivity and enterprise-grade equipment.

With HughesNet's high speed and always-on connectivity, Starr can now process an electronic warehouse receipt in three seconds instead of three days. "We're thrilled at the speed



of our HughesNet service. It's wonderful," said Starr. "Since demand for our services has gone up, HughesNet has been a big help. We haven't had any problems with outages or slow connectivity and have actually seen our business operations streamlined because of the satellite service."

In addition to processing electronic warehouse receipts, the company is using its HughesNet Business Internet service for a myriad of business tasks, including email, file backups, and purchasing.

"Without HughesNet satellite broadband, we simply wouldn't be in business," said Starr. But with its reliable HughesNet broadband service, Producers Gin can handle more shipping orders, create and transfer more receipts, and download more software updates than ever before. In fact, the company is processing more than 30,000 bales per year, drawing in freshly picked cotton from farms as far away as 150 miles.

And that means more soft cotton towels and shirts for the rest of us. ■

Hughes Award-winning Learning Solutions Go the Distance



Education has long been recognized as the door to opportunity. And distance learning solutions from Hughes are now opening ever-greater opportunities for businesses, non-profit organizations, educational organizations, and governments to reach out with effective, online training for employees and customers alike. Here are some of the latest awards garnered by Hughes for contributions to distance education from around the world.

Business

Helius, a Hughes company, and JCPenney were the recipients of the 2009 Learning Impact **Best Corporate Training Solution Award** from the IMS Global Learning Consortium for use of educational technology in a business environment. Using the Helius MediaClassroom system, JCPenney broadcasts both live and

on-demand training via satellite to associates in all store locations, saving over \$20 million in related training costs. The IMS Learning Impact Awards recognize the use of technology to improve learning across all educational segments and in all regions of the world.

Non-Profit

The 2009 IMS **Best Association Training Technology Award** was bestowed on Helius and the Canadian Centre for Ethics in Sport (CCES) for use of technology in a non-profit organization. Using the Helius Portal e-Learning system, CCES now creates, deploys, and tracks Web-based anti-doping training for more than 20,000 athletes across Canada who compete in Canadian Interuniversity Sport, Canadian Colleges Athletic Association, Football Canada, Canadian Hockey League, as well as other organizations.

Education

Hughes do Brasil, received an IMS **Gold Learning Impact Award** for its distance learning solution provided to the Education and Quality of Teaching Department of the State of Amazonas (SEDUC-AM). In addition, the project was named **Best in Category: Student Success Solution**.

Government

Helius was also named a recipient of the **Federal Government Distance Learning Association's (FGDLA) Innovation Award** for the development of emerging distance learning technologies that support the Government Alliance for Training & Education by Satellite (GATES) Summit and other distance learning activities benefiting the U.S. federal government.

And, as if all that weren't enough, the Law Enforcement Information Management Section (LEIM) of the International Association of Chiefs of Police recognized Helius for its contributions to law enforcement at the 33rd Annual LEIM Section Annual Conference and Training Exposition. Helius digital communication solutions have been deployed at law enforcement agencies across the U.S. to improve training, internal communications, public relations, and ultimately, officer safety. The largest is for the Los Angeles County Sheriff's department, serving over 18,000 deputies and staff. ■

100 Gbps Satellite Coming in

So what's next for Hughes after the successful launch of its HughesNet® broadband service on the groundbreaking SPACEWAY® 3 satellite? It should be no surprise that the market leader is once again poised to push the high-tech envelope.

The company recently announced plans to launch a next-generation, high-throughput satellite in the first quarter of 2012 to expand its rapidly growing HughesNet service across North America. Employing

a multi-spot beam, bent pipe Ka-band architecture, the new geostationary satellite will deliver over 100 Gbps throughput and use an enhanced version of the IPOS (Internet Protocol over Satellite) standard—the world's leading broadband satellite standard.

Space Systems/Loral has been selected to manufacture the new Hughes satellite, based on its SSL 1300 platform, which has proven flexibility for a broad range of applications and is expected to provide



service for 15 years or more. The new satellite's capabilities will augment the successful SPACEWAY 3 satellite system, the world's first with onboard switching and routing—bringing a wealth of high-performance, value-added services to Hughes consumer, enterprise, and government customers. ■

Hughes Highlights

Emergency and Military Response Capabilities via SPACEWAY 3

Advanced Broadband Satellite Services Demonstrated during Coalition Warrior Interoperability Demonstration

An emergency can strike in seconds. When it does, immediate broadband access is one of the keys to getting help where it's needed—fast.

"SPACEWAY® 3 offers a unique, alternate-path networking solution for U.S. military and government agencies to stay connected when disaster strikes, avoiding the vulnerabilities of terrestrial networks, including the Internet," said Rick Lober, vice president and general manager, Defense and Intelligence Systems Division, Hughes.

During the Coalition Warrior Interoperability Demonstration held in June, Hughes demonstrated its capabilities for rapid deployment of satellite-based broadband for disaster and emergency response. The annual event focuses on criteria defined by combatant commanders and government agencies, simulating real-time events and putting lifesaving information-sharing technologies to the test.

Launched into commercial service over North America by Hughes in April 2008, SPACEWAY 3 is the world's first satellite system with on-board switching and routing, making it ideal to rapidly internetwork any number of sites among military and/or federal, state, and local government agencies. At 10 Gbps throughput, it is the highest capacity satellite in commercial service and employs numerous advances such as onboard packet switching, reusable Ka-band spot beams and a mesh array antenna, enabling the cost-effective delivery of high-quality broadband services across the continent. ■

Hughes Teams Tend Vietnam Veterans Memorial

Eight teams of Hughes employees, families, and friends have spent some of their summer Saturdays over the past three years providing a very special type of community service. The volunteer teams, usually 15 to 20 people at a time, gather in Washington, D.C. to quietly wash, with soap and water, the Vietnam Veterans Memorial—known by many as simply "The Wall." The volunteers also clean the statues associated with the memorial and clear the area of trash and debris. Part of a dedicated volunteer effort under the guidance of the National Park Service, the Hughes employees performed this service on four Saturdays in 2009.

"It's been an honor to be a regular volunteer at the Vietnam Veterans Memorial," said Allen McCabe, assistant vice president of Consumer Sales with Hughes. "It's much more than just cleaning the memorial to remove bird droppings and sunscreen. It's also a way for people to remember the ultimate sacrifice paid by over 58,000 young men and women. Most of us grew up during that time period, and we try to give something back



to those heroes. We'll be working on the 2010 schedule later this year and I invite any Hughes employees interested in participating in a 'Wall Washing' next year to contact me at allen.mccabe@hughes.com." ■

Executive Corner

continued from page 1

SoC enabled a dramatic improvement in the performance and portability of our first mobile satellite handset. Fast forward to today's latest Oberon chip, which will enable a new generation of satellite-enabled smart phones, and the improvements have been dramatic. As shown in the table at right, the new chip yields more than seven times greater complexity at 20 percent of the power and four percent of the cost, with 28 times greater MIPS (millions of instructions per second) per watt of power.

This integrated capability to develop SoCs, making use of both our satellite systems know-how and our advanced chip design skills, is one of our core strengths. At Hughes, we don't just build chips—we build systems on chips that enable broadband communications around the globe.

The Right Chip for the Job

At the heart of every Hughes product line lies a custom chip. So how do we know which chip to build? Each of our product lines is organized around one of the satellite industry's air interface standards such as IPoS, RSM, and GMR1, approved by the world's standards bodies—and based on significant contributions by Hughes. Each of these air interface standards has a unique custom chip that is engineered to perform the functions of that standard. The same chip can then be used across a range of terminals and models and will ensure compliance with the standard. For example, there is one set of chips for IPoS-based interfaces and a different set for mesh-type air interfaces such as those used with terminals powered by the SPACEWAY 3 satellite. A third type is a low-powered chip that we are developing for use in a battery-operated mobile satellite handset.

The Mobile Satellite Market

Speaking of mobile satellite networks, Hughes has developed custom components, systems, and terminals for the world's leading mobile service providers. For example, since 2001 we've worked with Thuraya developing voice and data systems and handhelds, and this year developed a new packet data system and gateway. Similarly, we're developing custom chip sets for TerreStar Networks and SkyTerra, both setting up mobile satellite services in the U.S., and for GlobalStar, a worldwide low earth orbit (LEO) satellite operator.

On another project, we're working with Germany-based Infineon to develop an exciting software-defined radio (SDR) chip for use in dual-mode smart phones for TerreStar Networks and SkyTerra. This state-of-the-art chip will be programmable with highly efficient signal processing structures that can handle both cellular technologies (2G, 3G, and 4G) as well as GMR1-3G satellite standards. Such flexibility is unprecedented in a handheld-size smart phone and we expect it to result in a strong competitive advantage.

The Hughes Market Advantage

What's truly amazing about chips is that every year we make them more complex, increasing the functionality and performance of our products—yet without increasing their price or size. Now that's a sustaining market advantage. And it's what makes every day in the life of our engineers so challenging and rewarding. ■

What a Difference a Decade Makes

	1999 Gemini chip	2009 Oberon chip	
Complexity (Million gates equivalent)	2.4	16.9	Improvement factor
Power consumption (Watts)	2.5	0.5	
Computing power (MIPS - Million Instructions per second)	54	300	
Manufacturing cost	1.00	0.23	
MIPS per watt	22	600	



Chip shown at actual size

HUGHES11717 Exploration Lane
Germantown, MD 20876 USAPresorted
First Class Mail
U.S. Postage
PAID
Germantown, MD
Permit No. 4413

Photo by Ken Howard © BMP

■ Russian Teams Compete for VSAT Installation Championship

Fourteen teams took part in the second all-Russian, high-speed VSAT Installation Championship at the Bear Lakes Satellite Communication Center near Moscow in June. Among the participants and guests were leading Russian VSAT service providers Global Teleport/Synterra, Settelecom/Altegrosky, KB Iskra, Amtel-Sviaz, Orange System, and IP Net, which together represent more than 67 percent of the Russian VSAT market.

This year's top speed for a VSAT installation was clocked in at 8 minutes, 50 seconds by Alexey Konov and Ruslan Sidorin of the Blue Rays team from Amtel-Sviaz, Moscow—less than half of the 2008 record of 19 minutes. The grand prize, a Hughes HN7000S router along with a broadband Internet service subscription from Altegrosky, was awarded for the first place in all-round competition to Anatoly Ayurov and Pavel Zagalo of the Uragsha team from Ulan-Ude. Congratulations to all!

■ Encore Networks and Hughes Team Up to Provide Utilities Solutions

Hughes has added Encore Networks as a Technology Partner in the Hughes Broadband Alliance Program, and certified Encore's complete line of rugged and commercial-grade BANDIT™ satellite routers for use with the Hughes suite of utility solutions. By using Encore's serial protocol to IP support capabilities, Hughes can provide secure, high-performance, end-to-end satellite connections for legacy SCADA networks, thus meeting mandated industry requirements.

Hughes Utility Solutions are designed to provide utilities cost-effective, secure broadband services wherever they need it, with nearly 100 percent network uptime achievable through path-diverse backup of their primary network. Whether migrating to standards-based IP from legacy serial applications, or implementing SCADA or VPN applications, Encore's technology is a natural complement to the Hughes Utility Solutions offering.

■ Hughes Signs Home Automation Firm as HughesNet Sales Agent

Hughes recently signed a sales agent agreement with Control4, a Salt Lake City, Utah home automation company, authorizing its network of over 1,400 dealers in the U.S. and Canada to sell HughesNet satellite broadband Internet service. Consumers who are interested in automating their homes are often unable to do so because their homes are located in areas without DSL or cable broadband service.

Available across North America, HughesNet satellite broadband Internet service is an ideal solution, requiring only a clear view of the southern sky. As HughesNet sales agents, Control4 dealers are now in an excellent position to create a new revenue stream by reaching a large base of consumers who cannot access broadband through landline services.