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CENIC News

President's Message

I'd like to share with you information about a very significant conference, iGrid 2005, hosted at UCSD-CalIT2 this last week. This conference was the 4th biennial event, whose goals are to accelerate the use of multi-10gb international and national networks, such as CalREN, to advance scientific research and to educate decision makers, academicians and industry researchers about these networks and the opportunities they provide. One of the other articles in this edition describes the major role CENIC played in provisioning networking capability to this event but I'd like to concentrate on the content of the conference and why it provides a foundation for benefits for all of CENIC's research and education community.

The event included a wide range of panels and demonstrations. One of the presentations was on the history of the Internet, by some of the pioneers who were involved in its development. But as interesting were discussions about the future of the Internet. Let's just say that we have in our midst those who are identifying the design of the future Internet. Similarly, demonstrations of capabilities of the high performance network were equally stimulating.

In one live demonstration, attendees were able to view live high definition images of active thermal vents on the ocean floor. This feed came directly from the ocean floor by way of the research vessel Thomas G. Thompson. The ship is on site at a research expedition of the Juande Fuca Ridge in the Northeast Pacific Ocean, 200 miles off the Washington-British Columbia coast. This unprecedented live, HD videobroadcast from what has been described as the "Yellowstone of the deep sea" epitomizes the next generation of research in which data and images collected by scientific instruments are immediately available across networks such as CalREN. Direct observation of giant earthquakes, cavorting marine microscopic life-forms and a host of equally fascinating processes, creatures and phenomena can be brought into laboratories and classrooms by way of CalREN and networks to which CalREN connects. Among our challenges is to assure we communicate the opportunities for teaching, learning and research that are created as a result of these capabilities.

The CENIC Board has formed a new subcommittee on Teaching and Learning and I hope we are able to consider in that forum how capabilities such as those demonstrated at iGrid can be used for instruction across all segments.

Source: Jim Dolgonas, CENIC

NOC Report

Bi-annual (six month) summary of NOC survey results

Since implementation of the CENIC NOC "Customer Satisfaction" survey in February, 2005, there have been 3,819 resolved trouble tickets. As a result of these resolved tickets, we've sent out 1,125 survey invitations and received 60 completed surveys, representing a response rate of 5.3%. The 2,694 tickets that did not generate survey invitations were internal tickets created by and for CENIC staff (e.g., requests for access to colocation facilities).

Our expectation was that we'd primarily hear from dissatisfied respondents, but we are pleased to report the survey results have been overwhelmingly positive with 93% of the respondents stating they were satisfied with the service they received on their particular request. 40 of the 56 satisfied respondents (71%) reported that they were "very satisfied."

This is not to say that the findings offer no opportunities for improvement. While ratings in all areas were good, in the area of NOC staff characteristics, there were interesting correlations between the items receiving higher ratings (90% and above) and similarly interesting correlations between those receiving lower ratings (85-89%). The higher ratings largely pertained to skills required to address technical problems; the lower ones largely pertained to communications related issues.

Based on the survey feedback, we are developing in-house training to improve communications, primarily written communications, and particularly in the areas of thoroughness and clarity. In addition, we plan to remind staff of a fairly standard customer service procedure: confirming that the requester does not have any outstanding questions or concerns and that he or she is satisfied with resolution prior to considering the request resolved and closing the ticket. The work of the NOC advisory committee to review and revise information provided on trouble tickets will also contribute to improvement in this area.

One final note of interest: while the majority of requests for assistance are received via email (70%), we continue to receive a substantial number of requests by phone (30%). Additional survey detail can be provided upon request to Sherilyn Evans via email to <sevens@cenic.org>.

Support for iGrid Conference

From Monday, September 26, through Friday, September 30, the iGrid conference (<http://www.igrid2005.org>) was held in San Diego at the UC San Diego campus in the brand new CalIT2 building. iGrid is one of the major events that helps those researchers who are working on major improvements in science and in networking. By "pushing the edge of the envelope," which is what iGrid is all about, new directions in research and networking often result.

CENIC's technical operations team has made a significant contribution to iGrid this year. We have provisioned a number of wavelengths across the CalREN infrastructure between San Diego and Los Angeles and Los Angeles to Sunnyvale and have made enhancements to Pacific Wave, as well as adding wavelengths across NLR to Sunnyvale, for this event. This has been an excellent opportunity for CENIC to demonstrate the quality of both our optical network and technical team.

Source: Sherilyn Evans, CENIC

CalREN/HPR Connection at ESNet

The national Energy Sciences Network (ESNet) backbone is now connected in Sunnyvale at 10 gigabits per second to CENIC's international peering exchange, Pacific Wave, a joint project of PacificNorthWest Gigapop, USC and CENIC to facilitate the free exchange of information among various national and international networks. This connection replaces an earlier 1 gigabit connection of ESNet to CalREN via UC Berkeley.

Source: Brian Court, CENIC

Campus Access Infrastructure Initiative (CAI) Update

Since last month's CAI update, CENIC engineers have implemented two additional GigE connections to CSU campuses at Stanislaus and Humboldt. San Francisco State and Sonoma State universities are the next two campuses scheduled for cutover to their new GigE connections.

Good progress is being made on planning and construction work related to providing GigE connections via CENIC managed fiber to Cal Poly Pomona, CSU San Bernardino in the south and CSU Monterey Bay and the California Maritime Academy in the north. Contractors and vendors needed to complete these projects are being managed by CENIC. Firm due dates for these fiber connections cannot yet be provided until we are further along in the permitting and construction work, although a general timeline has been posted online.

The online CAI project schedule is available at <http://www.cenic.org/projects/cai/>.

Source: Ed Smith, CENIC

Arizona CalREN HPR Connection

Arizona State University (ASU) has joined the CalREN/HPR network through the extension of CalREN services over CENIC owned fiber to Phoenix. This one-gigabit connection takes advantage of the CalREN hubsite recently established at UC Riverside.

Source: Brian Court, CENIC

Coachella Valley Project

The construction of Metropolitan Area fiber from the CalREN-DC hub site in Palm Desert to the College of the Desert and to the Riverside County Office of Education's Indio office had been on hold for seven months due to delays in obtaining duct leases to provide paths for the fiber. Negotiation with the duct owner is complete and the permits allowing resumption of construction will be issued in early October. The total Coachella Valley construction project is now expected to complete by year-end 2005.

Source: Greg Scott, CENIC

Humboldt County RFP

Redwood Coast Rural Action (RCRA), Redwood Region Economic Development Commission (RREDC), and Redwood Technology Consortium (RTC) recently formed a Working Group on Universal Regional Connectivity. North Coast residents, educational institutions, government agencies, and businesses are desirous of increasing the reliability of telecommunications, offering competitive choices in telecommunications providers, and enabling expansion of broadband coverage.

CENIC has been working to help these groups achieve their objectives. The RCRA Working Group requests proposals from qualified consultants to develop a business model for building a redundant fiber route into Humboldt County and for obtaining services via the installed infrastructure. This project includes researching, analyzing, and recommending ownership, financing, and operational models. The RFP is at: <http://redwoodtech.org/HotTopics/>.

Those interested in responding to this RFP should send an e-mail to Tina Nerat at south@northcoastsbdc.org. This will register you for e-mail updates. As responders ask questions, answers will be sent to all registered and will also be posted on this web site and RREDC web site (www.rredc.com).

Source: Tina Nerat, Northern Coast SBDC Network

Hold the Date for CENIC 2006

CENIC 2006, CENIC's annual conference, will be held on March 13-14-15, 2006 at the Oakland Marriott City Center. This is always a great event to learn about new technologies, new networking applications, and meet with your colleagues in a relaxed environment. Be sure to reserve the dates now.

National Networking News

Details on TeraGrid's \$150m Expansion Plans

The National Science Foundation recently announced a five-year initiative with \$150 million in funding to operate and enhance TeraGrid, a distributed national infrastructure supporting computational science.

The new TeraGrid award includes \$48 million to provide overall architecture, software integration, operations and coordination of user support.

One major change that this funding brings is the creation of the Grid Infrastructure Group, or "GIG." The GIG is a new team of about 40 staff who have responsibility for the overall management, planning, operation, common software and services, and evolution of TeraGrid. It's also a team that capitalizes on expertise at each of today's partner sites, so it is woven into the fabric of the partnership that built the initial system.

Programmatically, we have created three interlocking initiatives that serve as organizing principles for TeraGrid. We refer to them as TeraGrid "Deep," "Wide" and "Open."

TeraGrid "Deep" is an extension of what we focused on primarily during the first phase of the project. TeraGrid partners provide some of the world's most powerful resources, and we are working with scientists to integrate them so that the resources can be harnessed to enable new discoveries that would not be possible otherwise. We have a hands-on science support team that consists of about 15 people who are working with TeraGrid users to tune their applications to exploit this distributed infrastructure.

TeraGrid "Wide" is a new program that is making this complex infrastructure more accessible to a much broader community than have been able to use high performance computing to date. This program involves a set of prototype "science gateways" where we are developing the processes and policies to provide TeraGrid access to scientists through Web portals, desktop tools, and even local clusters and Grid systems. Essentially, we are partnering with groups who provide infrastructure for their communities, and we are supercharging their infrastructure by enabling them to "back-end" their services with TeraGrid computational, storage or other services. This is also a program that is open, as the major work we are doing is in defining the policies, processes and support structures that allow science communities to "plug" their systems into TeraGrid.

Finally, TeraGrid "Open" is what is driving the evolution of our software and services, with the goal of interoperability with other Grid systems, as well as readily including resources from new partners into the TeraGrid environment. We are partnering with the Open Science Grid and the NSF Middleware Initiative to chart a path where we are increasingly sharing common middleware and where our software environments are progressively making it easier for users to move their applications between autonomous Grid infrastructures.

NSF believes TeraGrid and Grid computing in general can provide important integrating components of "cyberinfrastructure." TeraGrid relies on Grid computing technology and the community that is advancing that technology, but TeraGrid is not fundamentally about Grid computing. It's about enabling scientific discovery, with Grid computing as a key part of the cyberinfrastructure necessary for that aim.

Science Gateways, one of the most exciting things we are doing, and I believe this kind of work will create a real inflection point in terms of the number of people able to take advantage of high performance computing resources. Initially, we developed a set of about 10 science gateway partners, with a variety of implementations ranging from Web portals to desktop applications to community-specific computing and Grid infrastructures.

Cyberinfrastructure is riding on new Grid and Web capabilities, including Web services, as well as continued increases in computing, networking and storage power. Cyberinfrastructure will combine these things to bring more sophisticated capabilities to the table, so you'll be able to ask more interesting questions. Instead of asking, "How did this portfolio of stocks perform over the past year?" you'll be able to ask, "How might this portfolio perform if gas prices hit \$3.50 a gallon?"

Today we have about 550 projects and in two weeks our quarterly peer-review process will be adding to that number, so we are likely to be at around 700 very soon. I am particularly interested in those applications that are pioneering ways to exploit this unique distributed system. Most are using the environment to support a workflow approach, where they no longer need to do all of their work on systems within one room. One of the focus areas of our science gateways program is to provide workflow tools to make this easier to do. Others are literally treating the system like a big machine room, selecting the largest computational resource available at a given time to run their applications while storing and analyzing the data at their favorite center.

Source: CAnet News and GridToday (<http://news.taborcommunications.com/msgget.jsp?mid=465467&xsl=story.xsl> , <http://lists.canarie.ca/pipermail/news/2005/000097.html>)

Divergent Views on the Future of the Internet

Today's focus: Groups try to chart future of IP nets

As IP networks take on more business-critical roles, the evolution of these infrastructures becomes cause for great concern, especially with the advent of peer-to-peer applications, Web-based services, and IP-based voice and video.

Several topical sessions will address such concerns this week at the Next Generation Networks conference in Washington, D.C. Pressing issues to be discussed include the future architectural and governmental directions of the Internet, the impact of peer-to-peer applications on business IP networks, and retooling these infrastructures into service-oriented architectures (SOA) supporting Web-based services and XML message-based routing.

Underpinning the discussions about the future direction of the 'Net are two divergent viewpoints: one from the IETF, the other from the International Telecommunications Union (ITU).

"Probably the biggest issue that'll be coming up is, which NGN?" asks Dave Passmore, research director at Burton Group and NGN 2005 conference chairman. "The ITU uses the term Next Generation Networks as the follow-on to the [public switched telephone network], the IP-based phone network that's built on [IP Multimedia Subsystem]. The IETF will tell you that the NGN and IMS are going to collapse under their own weight, that it won't scale, that it violates the layering principle of protocols, that it's doomed to fail."

The two models are radically divergent, says Scott Bradner, consultant with Harvard University's University Information Systems and a Network World columnist , who is chairing the panel.

"The current Internet model is the stupid network model, where the network doesn't know what applications you're running and doesn't try to be helpful," he says. "The ITU's model [is] where the network is application-aware and can provide specific extra support for a particular application, such as VoIP. That session will compare what their strengths and weaknesses are, and hopefully out of it we can get some idea of what the future is going to look like."

Bradner says the ITU's model is designed to provide defined and guaranteed QoS, while the Internet is a best-effort model based on bandwidth capacity. He says both are applicable given the network circumstances - if there's plenty of bandwidth, there's no need for QoS controls; if not, there is.

Bradner says the two models will not converge, but will interoperate.

This session and another Bradner-chaired tutorial - on the future of the 'Net - is of particular interest to Aetna, the \$20 billion insurance giant.

"A lot of the things we're doing all in one way, shape or form exploits the Internet - Wi-Fi, VoIP, work at home, broadband, as well as across much of our e-commerce with file transfers and [business-to-business] VPNs," says Kevin Sweeney, director of external connectivity and mobile computing for Aetna. "So where that's going, both from a regulatory standpoint, as well as technology, is of great interest."

The future of the 'Net could be shaped in large part by the need to support peer-to-peer applications and Web-based services, which use peer-to-peer protocols. This type of traffic is growing in use and importance in enterprise networks and on the 'Net, especially as companies move to SOAs designed to support peer-to-peer and message-based transmissions.

Peer-to-peer traffic accounts for more than 60% of Internet traffic, according to Passmore, and widespread adoption of peer-to-peer applications, such as Microsoft's integration of Groove Networks into its upcoming Vista operating system, formerly Longhorn, and BitTorrent's file-sharing technology, are expected to further inundate the 'Net.

"Here and now, [these are] bigger [issues] than you could ever imagine," says Frank Dzubeck, president of consultancy Communications Network Architects. "Most people don't understand that Web services are now the way you deliver to the developer, business portion of the company and customer. You now deliver services vs. an application or a transaction. The amount of information that now must be gleaned, monitored and managed, as well as transmitted, increases exponentially."

Source: Network World (<http://www.networkworld.com/news/2005/092605-ngn.html>)

Municipal Broadband: Should Cities Have a Voice?

Remarks by Jon Leibowitz, Commissioner, Federal Trade Commission to the National Association of Telecommunications Officers and Advisors (NATOA), 25th Annual Conference - Washington, D.C. - September 22, 2005

The first question policy makers need to ask is this: why is broadband good for consumers? There are many reasons, but the most compelling is that broadband is increasingly vital to our everyday functions and to our economy. It's not just about having the ability to download a movie in almost the blink of an eye, it's about the ability for everyone – business and consumers alike – to be able to access information that is fundamental to survive, grow, and thrive into the 21st Century.

In this day and age, Internet access is even more vital than some traditional government services because the Internet is both a repository of information, like a library, and a shared public space, like a park, to which everyone should have access. However delivered, inexpensive or free high speed Internet access is essential to bridge the digital divide and boost technological literacy. High speed access, particularly wireless access, benefits students, parents, small businesses, emergency workers and anyone else who values the enhanced portability, flexibility and speed that comes from not having to be tethered to a modem. And as the New York Times noted just this weekend, a Wi-Fi mesh could be the most promising and reliable emergency communications technology in the wake of a disaster like Hurricane Katrina. Finally, the economic benefits of more broadband are potentially enormous: computer, hardware, software and e-commerce businesses would grow exponentially if we could increase penetration by, say, 50 percent. On these basic points – whether you're conservative or liberal, in business or in government, meat-eater or vegan – all seem to agree.

That leads to the next question: why should local governments consider offering it? The answer is simple: the private sector won't always do so. Municipal development of broadband may be the best option in some cities where many residents cannot afford the high prices of private Internet providers, or where Internet providers simply did not see enough economic incentive to provide universal coverage. It may be the only option in rural areas where phone and cable companies have not extended any service – often contending that it would be prohibitively expensive. Indeed, even the mere threat of local government entering the broadband market may entice phone and cable companies to compete in these low-income and low-density areas. Let me walk through a few brief case studies – there are many, many more out there – that illustrate why cities should have the option of offering broadband to their residents.

The most celebrated example of local government seeking to provide broadband service to its residents took place in Philadelphia where, beginning last year, the city undertook plans to offer wireless Internet access, or Wi-Fi. The city's rationale was straightforward: many of its residents simply did not have access to broadband, and Wi-Fi service would spur economic development, attract tourists and benefit city agencies at lower cost than the current telecom infrastructure. Philadelphia's chief information officer also stressed the importance of providing broadband for education – noting that while schools have heavily invested in their computer systems, only 58 percent of Philadelphia's students have Internet access at home.

These plans, of course, were almost terminated at their inception by lobbying efforts at the state level. But fortunately, after a public outcry, reason won out (to some extent) and Philadelphia was carved out of broader state restrictions on municipal Wi-Fi in future years. Today the city is moving forward, and last month Philadelphia announced that EarthLink and Hewlett-Packard are the finalists for construction of its Wi-Fi network. Without getting ahead of myself, it is interesting to note that Philadelphia is turning to two highly capable private-sector companies to potentially provide this service – undermining the position of some that cities cannot provide broadband competently and the position of others that this issue breaks down as a fight between the private sector and local government. Hopefully the residents of Philadelphia – and in other major cities, like San Francisco, that are working on similar proposals – will soon have affordable access as a result of their government's efforts.

Moving from urban areas to rural communities, numerous small towns have taken steps to offer Wi-Fi service and other forms of broadband. While in some major cities there is a digital divide, in many small towns there is no divide at all: there is simply no service. Take, for example, Scottsburg, Indiana – a town of about 6,000 people – where phone and cable companies contended offering broadband service would be too costly. In Scottsburg, not only was wireless access important to residents, but it also was critical to the city's business retention efforts: several threatened to leave Scottsburg unless they could get broadband access. The city's electric utility stepped up and is now providing wireless service throughout the town. Thanks to this new telecommunications infrastructure, both business and individuals in Scottsburg have broadband access, employees have held onto their jobs, students have the same educational opportunities as their peers in the big cities, and the town is poised for additional development.

One final success story. In Lafayette, Louisiana – a small city with a population of slightly more than 100,000 – local officials sought to build an advanced network offering voice, data and video. Again, the purpose was to provide broadband services not being delivered to businesses and residents by the current provider. Not surprisingly, the incumbent phone company raised obstacles to the plan – and more may be coming before the plan is ultimately implemented. But fortunately, in this case state law was on the side of the city, affirmatively allowing it to build out. When the phone company demanded a referendum, the public responded by clearly voicing its support for broadband: two months ago it approved authority for the city to sell bonds to finance this project by an overwhelming 62-38 percent margin.

Now I am obviously a supporter of municipal broadband. And I clearly oppose attempts by telephone companies to derail it – especially by doing so in the proverbial “smoke-filled room.” But the Lafayette fight does point us toward a more appropriate way to oppose these projects: if you don’t like what a city is doing, you can always try to “throw the bums out.” It is a time tested formula for citizens to ensure that their elected leaders don’t disagree with them too often. My guess, however, is that as long as residents are educated about what the local governments are trying to do, that usually won’t happen.

Many additional cities – small, medium, and large – are considering or implementing broadband networks. (We estimate perhaps 300 municipal broadband projects at present.) They are responding to a basic lack of service, they are seeking to promote business and they are using such networks to ensure public safety, improve educational opportunities and enhance consumer welfare.

And while I don’t think a comparison to other countries is needed to justify municipal broadband, such comparisons are worth noting. According to the OECD, the United States has dropped to 12th place worldwide in the percentage of people with broadband connections. But whether or not we are losing or gaining ground, in a world that is increasingly “flat” – borrowing Tom Friedman’s term – you cannot stress enough the importance of expanding broadband access across America. This is not only fundamental for education, but also for overall productivity and competitiveness. In any event, adding another competitor to what is now largely a phone and cable broadband duopoly can’t help but move us forward and inject the market with more competition.

Source: Federal Trade Commission (<http://www.ftc.gov/speeches/leibowitz/050922municipalbroadband.pdf>)

Networking researchers show their stuff at iGrid

By Jonathan Sidener-STAFF WRITER
September 27, 2005

Using technology that could change the face of home and workplace networking, researchers yesterday streamed ultra-high-resolution video from Tokyo to San Diego.

The image of Yuichiro Anzai, president of Keio University in Tokyo, appeared on a two-story-tall screen at the University of California San Diego as Anzai spoke with UCSD Chancellor Marye Anne Fox.

Each frame in the video contained roughly four times the resolution, four times as much digital information, as today’s HDTV.

The huge video file, moving at the speed of light across 9,000 miles of optic fiber, launched iGrid 2005, a biannual gathering of the world’s experts on high-bandwidth networking.

The trans-Pacific video and other demonstrations – one moved data from Europe to UCSD at rates of up to 20 gigabits per second – are significant because they foreshadow an era of essentially unlimited bandwidth, said Larry Smarr, professor of computer science at UCSD’s Jacobs School of Engineering and director of Calit2, short for the California Institute of Technology and Information Technology.

Such high-resolution video is also known as 4K digital video because it has 4,000 lines of resolution. The format has been backed by major Hollywood studios as the future of digital movies.

Videoconferencing in 4K is compelling because it is visually equal to film, Smarr said.

The technology demonstrated yesterday will make possible more than videoconferencing and the distribution of Super High Definition digital movies, he said. It will enable scientific collaborations in which researchers can simultaneously share massive data files without being in the same hemisphere.

"A lot of people have experienced videoconferencing on the Internet that is low-resolution, shaky video," Smarr said. "It's going out over the shared Internet, which is like driving at 5 p.m. on the freeway.

"This is going over its own dedicated optic circuit. It's like having the freeway to yourself."

Theaters and corporations will soon want dedicated fiber circuits, Smarr said. Ultimately, homeowners will too, he said.

"It's a window to the future," Smarr said of the big-screen teleconference. "I don't think it's so crazy to say that people will want a gigabit, fiber connection to their homes. With the popularity of home theaters, and as content becomes available, people are going to want connections with a thousand times the bandwidth of their cable modems."

There are only a few 4K video cameras in the world, and two of them, a pair from Olympus, were used to shoot yesterday's demonstration in Tokyo, said Laurin Herr, president of Pacific Interface, an Oakland company that coordinated the optic network.

Similarly, there are few 4K video projectors. Sony lent one to UCSD for the event. Herr said the video signal would be routed from Tokyo to Chicago, switched to a network running from Chicago to Seattle and finally moved via a third network from Seattle to San Diego.

University of Tokyo engineering professor Tomonori Aoyama said the iGrid conference serves as something of a touchstone for networking researchers, reminding them how quickly their field advances.

"Five years ago I hosted iGrid," Aoyama said. "At the time, 100 megabits per second was the limit. Only five years later, we are at 10 gigabits. That's 100 times faster."

Source: The San Diego Union Tribune (http://www.signonsandiego.com/uniontrib/20050927/news_1b27igrid.html)

Federal Bills: Senators Smith and Gordon introduce bill S.1583 - The Universal Service for the 21st Century Act

A bill to amend the Communications Act of 1934 to expand the contribution base for universal service, establish a separate account within the universal service fund to support the deployment of broadband service in unserved areas of the United States. The bill was referred to the Committee on Commerce, Science, and Transportation. Bill Status / Text of S.1583

Source: CTA-California Telephone Association (<http://www.caltelassn.com/reports05/FridayReport2Sept2005.htm>)

Like High-Def? Here Comes the Next Level

By: John Markoff

SAN DIEGO, Sept. 25 - Scientists and engineers in the United States and Japan plan to test the world's highest-resolution videoconferencing system on Monday evening over a 9,000-mile optical network linking the University of California, San Diego, with Keio University in Tokyo.

The demonstration will allow those attending the iGrid 2005 scientific computing conference to watch an exchange between Yuichiro Anzai, the president of Keio, and Marye Anne Fox, the chancellor of the San Diego campus, on a theater display with four times the image resolution of today's HDTV technology.

The technology will use American and Japanese fiber networks that stretch from Tokyo to Chicago, and the data will be relayed to San Diego via an optical network connection in Seattle at speeds of a billion bits per second.

The high-speed network will feed the data to a state-of-the-art Sony video projector that displays so-called 4K digital video, with images that are about 4,000 pixels across. When it is uncompressed at the receiving end, the video stream contains more than six billion bits per second.

Hollywood is on the verge of introducing an earlier generation of 2K digital video to theaters in the United States and Japan. But some in the industry believe that the 4K standard, which is still in the prototype stage, will be necessary to give theater viewers a significantly different experience from 35-millimeter film, today's standard cinema format, and to compete with HDTV screens in homes.

"What we're showing here is really important for Hollywood," said Laurin Herr, president of Pacific Interface, a technology consulting company based in Oakland, Calif., that is engineering the demonstration. "These same networks can be used to distribute other digital stuff such as live events, live concerts and sports."

The 4K demonstration is also important for film production and scientific work, Mr. Herr said, because studios increasingly shoot on one side of the world and edit and produce the film on the other. "Production has always been a team effort, but now the talent will be spread around the globe," he said.

Optical networks and high-resolution displays are also becoming mainstays of modern science. Scientific research increasingly involves the use of vast digital files, and the optical digital infrastructure that is emerging can be used to build computerized scientific instruments that essentially straddle the globe.

The iGrid 2005 event will feature an array of scientific visualization demonstrations, ranging from HDTV images from the depths of the ocean to the distribution of cosmic-ray data from Tibet.

Source: New York Times (<http://www.nytimes.com/2005/09/26/business/26video.html?ex=1128398400&en=ed0903ee1e63876f&ei=5070&emc=eta1>)

CPUC Encourages More Competition in the Broadband Market with Broadband Over Power Lines

SAN FRANCISCO, September 8, 2005 - California regulators today took steps to clear a regulatory path for deployment of new broadband technology using electric power lines. The California Public Utilities Commission (PUC), which oversees both the telecommunications and electric industries, took the unusual step of proposing a set of rules in advance for electric utilities wishing to test broadband over power line (BPL) technology in California.

"Today's action is a critical step toward clearing a regulatory path for developing BPL in California," said Commissioner Susan P. Kennedy.

PUC President Michael R. Peevey added: "California has been AWOL on developing BPL while other states have been forging ahead with testing and commercial development of this new technology. Today's action begins to move California back to the leading edge of the technology frontier."

The PUC's proposed rules would allow electric utilities to lease utility property such as distribution lines and utility poles for BPL projects without going through the lengthy review and approval process that such leases are normally subject to. The proposed rules would also give shareholders the right to keep financial proceeds of any BPL project so long as ratepayer funds were not used to finance the project. The proposal reaffirms that advanced telecommunications services such as broadband are not subject to state regulatory authority as are electric utility services or other traditional phone services, and makes clear that the PUC would not assert regulatory authority over BPL projects or services offered.

Last year, AT&T ended the only BPL pilot project in California, making California the only large state in the U.S. without a BPL pilot program or commercial offering by its largest electric utilities. On September 1st, San Diego Gas and Electric Company launched a BPL pilot. Meanwhile, Pacific Gas and Electric Company and Southern California Edison are considering pilot programs. Los Angeles Department of Water and Power is also conducting a BPL project. Approximately 26 other states have launched BPL projects (see attached map).

"This puts California back on the map in developing new broadband technologies," said Commissioner Kennedy.

President Peevey added, "BPL has the potential to offer head-to-head competition with cable and DSL someday - and the fact that electric power lines already reach virtually every home in the state makes BPL an important tool in our effort to make broadband accessible to every household in California."

The Commission's decision today opens a rulemaking and proposes a regulatory framework for BPL. The proposed rules will now be developed and released for public comment, and be subject to modification before being brought back to the Commission for approval. The proposed schedule calls for a final decision by the end of this year.

For more information on the PUC, please visit www.cpuc.ca.gov.

Source: CPUC-California Public Utilities Commission (http://www.cpuc.ca.gov/PUBLISHED/NEWS_RELEASE/49380.htm)

Internet Telephony Keeps Baton Rouge Hospital In Touch When Hurricane Hits

As New Orleans hospitals are forced to evacuate in the wake of hurricane Katrina, major trauma and critical-care hospitals in other parts of Louisiana are having to crowd patients into every available unused space. One such hospital is Baton Rouge General.

Operating on the power supplied by a back-up generator and with the availability of local phone service but no long distance, the hospital turned to technology to keep information flowing. Fortunately, the hospital still had its broadband Internet connection, so the hospital's information technology outsourcing provider, PHNS, coordinated donations from several companies including Dell, Vonage and a local Radio Shack.

"The local phones were restored, but there was virtually no long distance service," said Rich Roberts, a systems architect at PHNS. "The medical people need to be able to call doctors, insurance providers, specialists and family members that are outside the city. Then, we had an 'Aha' moment and called Vonage in New Jersey and asked for help."

Vonage provides voice over IP services via broadband connections.

"They immediately agreed to help, donating the hardware as well as the local and long distance services so the hospital can dial out of Baton Rouge," said Roberts. "That's huge for the doctors and for patient care."

Baton Rouge General was also in critical need of laptops with wireless connections that could be positioned in the new "patient areas," Roberts said, as patient information was stored in a database accessed from a Web interface designed by PHNS for the Baton Rouge General hospital.

"Twenty Dell laptops are in transit and should arrive this afternoon," said Roberts. "Dell responded quickly to our request and wanted to help. Then we had to get the [digital-to-analog converters] from a local retail distributor and most of them are shut down in Baton Rouge."

Hospitals now depend on computers to transmit everything from lab results and doctors' orders between floors as well as patient records to the Emergency Room. Efficient hospital IT operations are critical to maintain effective and safe patient care.

To connect doctors in the hospital to much-needed patient records and communication with outside doctors, specialists, insurers and family members, Roberts began calling stores in Baton Rouge until he found a Radio Shack on Florida Street whose manager was willing to help. The store manager, initially waiting out the storm and resulting slow day in his store, immediately offered to drive around and find the VoIP equipment when told the hospital was in need of the devices to connect their phones to the Internet. Thus freeing Roberts' team to manage the hospital's other IT needs.

The hospital ultimately used nine voice-over IP converters and wireless-enabled laptops with VoIP software installed for long distance communications and to set up a public branch exchange for communications within the hospital and sharing patient data.

"Now they can receive records, reports and information on patients," said Roberts, "and they can be in touch with attending doctors who will likely be in another city. It will be invaluable in the Emergency Room and triage areas. One thing is clear: Everyone really wants to help."

Source: Government Technology Magazine (<http://www.govtech.net/news/news.php?id=96493>)

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