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#### CENIC News

##### President's Message

Dr. Tom West continues to lead CENIC in it's efforts to represent the common interests of California's education and research communities in achieving robust, high capacity, next generation Internet communications services. He shares his recent involvements below:

"This past week has been an extraordinary week for me. I participated in three workshops involving the work of CENIC - two related to the Digital California Project (DCP) and one focused on the Next Generation Internet (NGI) initiative.

On Tuesday, the California County Superintendents Educational Services Association (CCSESA) held a workshop entitled "Fast Forward with the DCP" hosted by the San Diego County Office of Education. Over 125 superintendents, assistant superintendents, curriculum coordinators and other professionals engaged in curriculum and technology were in attendance. In addition, this event was web cast.

Larry Smarr, a CENIC board member, gave a rousing keynote suggesting that through the DCP, K-12 teachers and students will be able to join university researchers in the discovery of new scientific knowledge in ways impossible to image before the implementation of the CalREN-DC network. The day involved a number of sessions focused on explaining and demonstrating programmatic applications that can be used now by schools through the CalREN-DC.

On Wednesday in San Jose, CENIC hosted its first workshop as part of the NGI initiative - "Innovative First Mile Strategies". Over 80 participants representing a wide-range of private sector corporations, universities, national research laboratories and K-12 schools attended. As the title suggests, the day was devoted to hearing 18 presentations on various aspects of the "first" (some say last) mile challenge.

Bill St. Arnaud, Senior Director of Advanced Networks for CANARIE (Canada's advanced Internet development organization) keyed the event. Bill is a fountain of knowledge about networking efforts worldwide.

The exciting part of this meeting for me was the fact that firms are still pushing for technological and economic solutions to the first mile.

This workshop sets the tone for the NGI initiative. In the coming months, we will be addressing the policy, technical, economic and social issues that confront us in achieving the goal "A Gigabit or Bust by 2010!"

On Thursday, I was at Cal Poly Pomona for an all day workshop - "Governor's Mentoring Partnerships". This is a project of significant importance to our youth around the State. Karen Davis, the Governor's wife, is spearheading this initiative and came to Cal Poly to participate. What made this workshop unique was the

fact that a dozen sites on CalREN-DC network hosted participants. Three sites, Cal Poly, Sacramento County Office of Education and UC Santa Barbara were interactive sites, using video conferencing. The event was multicast and web cast.

An exciting week and a portent of things to come!"

Source: Tom West, President, CENIC

#### **DCP Project Update**

The Digital California Project continues to move forward on many fronts. The 53rd county, Modoc, has recently been connected to the network and the Trinity county connection is scheduled for completion next month. CENIC has just published a report on last mile connectivity and an update on last mile connectivity data is underway, with the assistance of the regional network liaisons. Information from the update should be available in the first quarter of 2003.

Two relatively high profile events, enabled by the CalREN/DC Network, were held during October. One, "Fast Forward with the DCP", sponsored by the California County Superintendents Educational Services Association (CCSESA) featured content provider demonstrations of how county offices of education can use the network's high-capacity digital infrastructure to provide powerful teaching and learning resources to classroom throughout California. More information on this event can be found at <http://www.sdcoe.tv/fastforward.html>. A second event used the CalREN/DC Network to enable "Keys to Successful Mentoring Programs", a conference hosted by the Governor's Mentoring Partnership. This historic virtual mentor training demonstrated the power of the network in using video streaming and webcasting technology to support community-based educational services. Four interactive conference sites were broadcast to 12 remote sites and over 400 volunteer participants throughout the state. California's First Lady, Sharon Davis spoke during the program and praised the DCP for linking "high tech to human touch."

Additionally, an advisory group was convened this month to begin development of a web site or portal to help K-12 DCP users conveniently find materials over the network that are appropriate and of interest to students, teachers and school administrators. After receiving input from a wide variety of K-12 educators, including members of the Program Steering Committee, this group will guide the development of an initial site scheduled for implementation during the first quarter of 2002. The site will be designed to be expanded as additional content is identified and made available.

Finally, planning is underway to identify potential alternatives to allow content providers to host content directly on the network. A range of available alternatives is expected to made available interested parties early in 2003.

Source: Jim Dolgonas, COO, CENIC

#### **NGI Roundtable Workshop Recap**

CENIC's Innovative First Mile Strategies Workshop was held on October 9th at the Fairmont Hotel in San Jose, CA. This NGI Roundtable event identified the opportunities and obstacles to achieving one gigabit per second connectivity throughout California by 2010.

During the comprehensive, five-session workshop, panelists debated multiple aspects of how California can move beyond current DSL and cable limitations. Presentations ranged from real-world examples of community-built broadband networks to future-oriented plans for wireless broadband. Speakers explored the details of how to lay the fiber, introducing new means of running fiber through sewers and gas pipes. And, network equipment providers and service providers had a chance to present upcoming advances in broadband technology, such as standards for 802.3ah and FSAN.

Throughout the day, the air was riddled with projected costs for a mile of fiber. The broad price range was indicative of the diverse perspectives contained in the single room. With over 80 attendees and just as many viewpoints, CENIC's quest for One Gigabit or Bust is sure to bear successive NGI Roundtable Events.

Source: Molly Petrick, NGI Roundtable Director

#### **CALVIP Update**

The California Video over IP (CALVIP) project continues to make progress. The group has hired a consultant to assist in defining requirements and drafting an RFP to be sent to potential vendors. Solicitation of vendor solutions will be evaluated and chosen by the CALVIP group. The group aims to have this process completed by the end of the year.

Parallel to this, work is being done in several areas to evaluate the readiness of California campuses and schools to implement Video over IP. Review of Video over IP work in other states is underway.

CENIC is working on the implementation of a pilot project to gain experience with bandwidth implementation issues. This research will be instrumental in determining the level of support that can be offered for Video over IP to the K-12 school sites that may have smaller bandwidth connections.

Source: Susan Bowers, CALVIP Project Manager

#### **CALREN Update**

The first milestone of CENIC's fiber infrastructure project was achieved on September 26 when the first optical wavelengths between Los Angeles and San Diego became operational. These wavelengths are in support of the Extensible Teragrid Facility project ([www.teragrid.org](http://www.teragrid.org)).

Nathaniel Mendoza of the SDSC Network Performance Reference Lab tested four CENIC-installed 192 SONET circuits to Los Angeles, one at a time, using a Spirent 10GB tester. Each lambda passed approximately 9 billion packets error-free. The OC-192 data rate is an impressive 9953.28 Mbps.

The Extensible Terascale Facility (ETF) award expands the TeraGrid to five sites: the San Diego Supercomputer Center (SDSC) at the University of California, San Diego; the National Center for Supercomputing Applications (NCSA) at the University of Illinois, Urbana-Champaign; Argonne National Laboratory near Chicago; the Center for Advanced Computing Research (CACR) at the California Institute of Technology, Pasadena; and the Pittsburgh Supercomputing Center (PSC) at Carnegie Mellon University and the University of Pittsburgh.

This extended TeraGrid environment will provide the national research community with more than 20 teraflops of computing power distributed among the five sites and nearly one petabyte (one million gigabytes) of storage capacity.

Source: Brian Court, Director, Network Design and Engineering, CENIC and Rex Graham, SDSC

### **InterAct, Issue 3, Featuring the California Orthopaedic Research Network**

Announcing a great new issue of InterAct featuring an in-depth look at the California Orthopaedic Research Network (CORN).

The California Orthopaedic Research Network (CORN) was formed to show the medical potential of advanced networks by demonstrating applications that illustrate real-time streaming of orthopaedic surgery. Its focus is to provide evidence that information technology enhances noninvasive surgical techniques and is key to the future of medical services. CORN members use advanced networks for education research, and day-to-day interaction, including streaming video for viewing surgery in real time, access to large image collections such as the Visible Human, and the use of haptics (teleoperation) to sense remote actions.

CORN utilizes CENIC's CalREN. Every founding member of CORN is among the founders of CENIC. "CENIC, through its CalREN connection, is dedicated to bringing advanced network resources to every aspect of education and research. We are proud of the role we are playing in helping CORN realize its mission," said John Vaille, director of Digital California Project applications at CENIC.

To find out more about CORN, read the featured article at <http://www.cenic.org/InterAct/interactvol3.pdf>.

### **National Networking News**

#### **USC Hosts The Fall 2002 Internet2 Member Meeting**

The Fall 2002 Internet2 Member Meeting will focus on innovative applications that transform many areas of human endeavor. The location of the meeting in Los Angeles, hosted by the University of Southern California, opens up opportunities to focus on communication and multimedia applications, including digital cinema and high-speed, network-enabled performance events. Faculty, researchers, scientists and applications developers should find this meeting particularly valuable.

General themes for the meeting include:

1. Advanced applications within and across disciplines, and the research and learning opportunities they open up
2. Emerging technologies and their impacts on research, learning and teaching
3. Integration of new technologies into a coherent architecture for researchers and educators

The final program for the Fall 2002 Internet2 Member Meeting is now available at [http://www.internet2.edu/activities/php/agenda.php?session\\_event\\_id=122](http://www.internet2.edu/activities/php/agenda.php?session_event_id=122) and online registration at <http://www.internet2.edu/activities/html/fall02-registration.cfm>.

Source: Internet2

#### **SDSC to Play Major Role in Six NSF Information Technology Research Awards**

The San Diego Supercomputer Center (SDSC) at the University of California, San Diego (UCSD) will help design and develop the information technology (IT) underpinnings for tomorrow's research in the geosciences, environmental science, biology, and other fields by playing a key role in six Information Technology Research (ITR) initiatives announced today by the National Science Foundation (NSF). These awards are designed to support "visionary work" that could lead to major advances in IT and its applications. Four of the projects involve large \$5 million-plus ITR awards, among only seven highly competitive such awards made. SDSC is also participating in two medium-sized ITR awards.

"Tomorrow's scientific breakthroughs depend critically on the advances we make in today's information infrastructure," said Fran Berman, director of SDSC and the National Partnership for Advanced Computational Infrastructure (NPACI). "Each of these ITR projects will leverage SDSC and NPACI experience and technologies to lay the groundwork for new discoveries in the Earth sciences, biology, and other disciplines. Such new science requires collaborative research to bring together new tools, new ideas, and powerful IT infrastructure."

SDSC is the lead institution in the Geosciences Network (GEON), an \$11.25 million award, and is participating as data component lead in the \$12.25 million Science Environment for Ecological Knowledge (SEEK) program, led by the University of New Mexico. SDSC is providing grid and cluster computing experience to the \$13.5 million OptIPuter project led by the California Institute for Telecommunications and Information Technologies, Cal-(IT)2, and contributing computational experience and resources in UCSD's Center for Theoretical Biological Physics, a \$10.5-million program. Half of the funding for the Center for

Theoretical Biological Physics is through the NSF Physics Frontier Centers program. These four projects are five-year large awards under the NSF ITR program. The two medium-sized ITR awards that SDSC is part of are the \$2.9 million Monitoring Civil Infrastructure effort and the \$3 million Network Framework project.

Source: SDSC

#### **Researches Developing Mobile System Infrastructure**

A new mobile computing project spearheaded by UCI's Department of Information and Computer Science (ICS) may help end the frustration of finding an empty parking spot. Armed with hand-held personal computers, iPAQs provided by Cal-(IT)<sup>2</sup> industry partner Compaq, drivers can search for vacant spots at the touch of a button instead of stalking commuters to their parked cars. This project is part of Cal-(IT)<sup>2</sup>'s technology-driven Ubiquitous Connectivity living lab.

For more information, visit: [http://www.calit2.net/research/mobile/uci\\_ipaq\\_gupta.html](http://www.calit2.net/research/mobile/uci_ipaq_gupta.html)

Source: Cal-(IT)<sup>2</sup> Communiqué

#### **Governor Davis Named Education Policy Leader of the Year**

California Governor Gray Davis has been named Policy Leader of the Year by the National Association of State Boards of Education (NASBE). The award is given annually to recognize the importance of visionary leadership to the quality and improvement of American education. Previous recipients include Secretary of Education Richard Riley, Colorado Governor Roy Romer, former First Lady Barbara Bush and Chicago Mayor Robert Daley. The award will be given at NASBE's annual conference in San Diego, California.

"Gray Davis epitomizes the vital role that creative, committed and enduring leadership plays in improving and sustaining our education system. From the moment he took office, he has made education his Administration's number one priority," said Brenda Welburn, NASBE Executive Director.

Davis' first act as Governor was to call a special session of the Legislature to address his proposals to ensure that every child can read by age 9, strengthen teacher training and education, and increase accountability in the school.

Under his direction, the state has established its first system of assessment and accountability linked to California's rigorous academic content standards, initiated California's first High School Exit Exam, and sponsored the nation's most ambitious program for providing intensive, University-based professional development to train all teachers in state standards.

Governor Davis has supported his policy initiatives with a dramatic increase in state funding. Spending on public schools has increased by 34% in the first three years of his term. Prior to his election as Governor, Gray Davis served as Lieutenant Governor for four years and as State Controller for eight years. From 1983-1987, Gray Davis served in the State Assembly from Los Angeles County and was Chief of Staff to Governor Edmund G. Brown, Jr. from 1975-1981.

NASBE represents America's state and territorial boards of education. Our principal objectives are to strengthen state leadership in education policymaking; advocate equality of access to educational opportunity; promote excellence in the education of all students; and assure responsible lay governance of education.

Source: PR Newswire

#### **About CENIC**

CENIC is a not-for-profit corporation formed by the California Institute of Technology, the California State University, Stanford University, the University of California, and the University of Southern California to facilitate and coordinate the deployment, development, and operation of a set of seamless and robust advanced network services. The CENIC Associates program offers qualified companies the opportunity to collaborate with CENIC in pursuit of the goal of providing the most advanced network services for research and education. Cisco Systems, SBC, and the University and Community College System of Nevada are CENIC's Partner Associates.

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