CALIFORNIA COMMUNITY COLLEGES

TIPS News

Technology in Education

Telecommunications Infrastructure Project Statewide

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Satellite Update

Charles Mawson
Analyst, Telecommunications CCCCO

As part of the new California State University (CSU) and California Community College (CCC) data and video network implementation (4CNet), a CSU/CCC committee met in spring 1997 and agreed to an MPEG-2 standard for future digital satellite transmission.

The California State University Satellite Network (CSUSAT) retained a telecommunications consultant firm (Skjei Telecom, Inc.) to assist in selecting appropriate satellite transmission equipment and planning for an uplink facility in Southern California at the CSU Chancellor's Office WestEd facility that was to be operational by June 1998.

In December 1997, the California Community College satellite subcommittee met to discuss future satellite standards for the CCC system. The latest recommendations to CSUSAT from Skjei Telecom, Inc. were evaluated, and the committee decided that in addition to affirming their prior recommendation, colleges should purchase digital satellite equipment compatible with the MPEG-2 standard. The committee also agreed that CCC satellite compatibility with CSUSAT standards was in the CCC system's best interest.

Recently, CSU notified the California Community College Chancellor's Office that they are

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Video on the 4CNet Backbone

Robert Ellsworth
Director, Media and Distance Learning, Butte College

On May 28, 1998, 4CNet authorized the first stream of community college video on its statewide data network. The event was the result of the 4CNet Backbone Upgrade Project, a Telecommunications Special Project funded by the California Community College Chancellor's Office.

The project, now midway in its implementation, involves five community colleges, 4CNet, and the Chancellor's Office in a partnership to run a video pilot study, utilizing PictureTel Venue 2000 videoconferencing units, the 4CNet backbone, and two multipoint video bridges.

The project began in May 1997. In a response to a Request for Applications (RFA), Butte Community College was awarded the project. Working in cooperation with the Chancellor's Office and 4CNet, Butte College was authorized to design and

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http://video.4c.net/TIPS

COMMENTARY

Organizational Change and the New Technologies

Virginia McBride
Director, Connecting the Campuses

The information age is over. Memorization and recall are not the strategies. The age of communication, collaboration, and action is emerging. What worked in the cloister model - come, sit at the feet of the master, hear the stories, and return to your villages to spread the word - turned on the need to spread the oral history of a people. What worked in the industrial model - everyone on the same page in the same book on the same day - turned on the need to produce assembly-line products.

With new technologies these models no longer work. The histories and details of almost anything imaginable are available at the touch of a button and can be carried in a coat pocket. Assembly line learning produces people who accept little responsibility for their own learning; they simply wait for someone to tell them which page to turn.

The community colleges need their brightest thinkers to attack, from as many directions as possible, the problems of learning. The system that has previously allowed faculty to simply state what shall be taught must now be turned around to ask new questions: What must the students learn? In what time frame? How will that learning be validated? What are the rewards for this validation?

These questions bring a whole series of patterns into question. The financial pattern rests on a seat-time model. The system asks, "How many students have been retained for how long?" as opposed to, "What has the student learned?" The patterns of the semester assume that learning occurs within a set time frame. Patterns related to assigning credit are related more to endurance than to the process of learning.

What issues do the new technologies allow the system to grapple with? First, the communications technologies allow for widespread and deep discussion of arenas that need to be challenged. Faculty, who could not participate in these discussions because of their chosen commitments to classroom teaching above other options, are no longer denied a voice. Neither time nor geography denies participation. Second, the new technologies allow a dramatic extension of the system's reach. The reach is to the designing of corrective approaches, the describing of interactions that must take place, the experimenting with interventions that strengthen the system, and the sharing of physical and human resources. Third, the new technologies allow learners to be included. The learners themselves must be added to the collaborative efforts; their stake is in their future.

Whether they are students, faculty, administrators, employers, or concerned citizens of the communities, the learners must determine the actions to be taken. The future demands the action. Talking about tomorrow is difficult. Talking about yesterday is easy, but it is not enough. The unanswered question is, "Where is the starting point?"

Title 5 Regulation Revisions and Distance Ed Survey Reports

Cristina Mora-Lopez
Distance Education Coordinator, CCCCO

Title 5 Regulations regarding distance education courses establishes that districts must report annually on the status of course offerings to the local Board of Trustees (BOT) and the California Community Colleges Chancellor Office.

The time line for the Distance Education reports due to the BOT and the CCCCO has been extended from July 1 to August 31, 1998.

The DETAC reviewed the 1996-97 reports prepared by the districts. Major issues for the systemwide study continue to be: (1) not all districts report; (2) determination of the most appropriate time to survey students and faculty; and (3) a definitive statement regarding the California Community College Distance Education Program is inconclusive due to substantial variability in format, content, and documentation in the reports.

Concerns have been raised regarding the best time to survey students and faculty. DETAC discussions concluded that the best time to survey students and faculty is in the beginning and end of the semester; therefore, those surveys will be sent in August or September 1998.

To rectify the problem of format, content, and documentation, the DETAC designed and developed reporting instruments to collect information on institutions, student satisfaction, faculty satisfaction, demographics, course information, student retention, etc. It is the intent of the DETAC to simplify the process for districts/campuses and alleviate any duplication of reporting through the Management Information Systems Division or other processes to allow for a more consistent format and collection procedure.

If you have any additional questions, please contact Cristina Mora-Lopez at 916-445-1643 or *cmoralop@cc1.cccco.edu*.

High Tech Group Throws Support Behind Online Education in California

Rich Halberg
California Virtual University Design Team

The California Virtual University legislation, Assembly Bill 2431, has received the endorsement of the Technology Network (TechNet), California's most influential technology-oriented political organization.

TechNet co-chairs John Doerr (Partner, Kleiner Perkins Caufield & Byers) and James Barksdale (President and CEO, Netscape Communications), and TechNet president Gary Fazzino, called AB 2431, "An important step in developing and presenting a cost-effective and efficient means for California colleges and universities to fulfill their academic missions."

Assembly Bill 2431 was introduced by Assembly members Brooks Firestone, Ted Lempert, and Jim Cunneen to codify state policy toward the use of Internet and advanced communications technologies to meet the growing demand for higher education in the state.

The Technology Network is a California-based bipartisan political service organization. Its purpose is to build relationships between technology executives and political leaders and to encourage the development of public policy at both the state and federal level that will benefit technology enterprises, their employees and the community as a whole. Its over 140 members include CEOs and presidents of technology companies and senior partners from venture capital, investment banking, and law frms.

The California Virtual University, a joint project of the University of California, California State University, California Community Colleges, and the Association of Independent California Colleges and Universities, ties the online and technology mediated distance education

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ON THE WEB
Videoconferencing Resources

- *CCC Videoconferencing Directory*

  A complete and current listing of all available CCC videoconferencing systems. Includes system location, contact information, and voice/ISDN phone numbers.

  http://www.cccco.edu/ESED/ir&t/tnt/video/VPB.html

- *PictureTel Corporation*

  Producers of videoconferencing systems, including the Venue2000.

  http://www.picturetel.com

- *Americas PictureTel User Group*

  The PictureTel User Group was founded in 1992 as an independent, international organization to promote and encourage communication between users of PictureTel Corporation products and services.

  The group provides feedback to PictureTel on product enhancements and new development, and works toward the overall education of the videoconferencing professional.

  http://www.pug.com/apug/hot.htm

- *Videoconferencing Glossary*

  This Pacific Bell Education First site is a good reference source to help users become familiar with some of the terminology common in video-conferencing.

  http://www.kn.pacbell.com/wired/vidconf/glossary.html

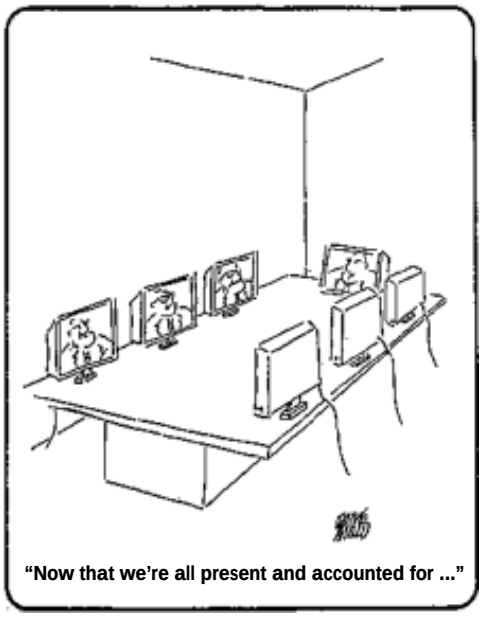
- *VC Quest Online*

  VC Quest is the most comprehensive directory of United States compressed videoconferencing sites anywhere.

  The directory currently contains over 3800 listings.

  http://www.vcquest.com

Videoconferencing Humor



"Now that we're all present and accounted for ..."

PIC Code Changes

Starting July 1, 1998, rules for long distance ISDN (data and video conferencing) calls using Preferred Interexchange Carrier (PIC) codes will change.

PIC codes are currently 5-digit prefixes which identify US long distance carriers to the local exchange carriers (LEC) and allow them to route calls according to the customer's specification. You may have sometimes used them to specify which long distance carrier will be used with video conferencing calls. All ISDN phone lines are automatically assigned a PIC code, but can be transferred to any one of 999 long distance carriers in the country.

Formerly, the PIC code format was a five digit number, such as: "10xxx". The new codes use the format: "1010xxx" instead. The last three digits remain the same as you currently use. Call your individual long distance carrier if you have further questions.

You can find a listing of available PIC codes on the Internet at: *http://www.davis-company.com/picbynumber.html*

TechNet Endorses CVU

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offerings of the state's accredited colleges and universities into one Internet-based catalog. Currently, 89 campuses link more than 700 courses to the CVU catalog, which is located on the Internet at http://www.california.edu.

The full text of AB 2431 and excerpts from TechNet's support letter are available on the CVU Web site (*http://www.california.edu*).

For more information, contact Rich Halberg at 916-322–8864 or *rhalberg@vudesign.ca.gov*.

Video on the Backbone

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implement a pilot study to test video over the 4CNet backbone.

To aid in the pilot study, the project authorized the participation of four additional community colleges. Through another RFA process, Shasta College, College of the Desert, Cerritos College, and Hartnell College were selected. All of these colleges exhibited in their applications substantial experience in video-conferencing.

Under the requirements of the project, each participating college was required to establish either an ISDN or a T-1 connection from their PictureTel Venue 2000 to an entry point on the 4CNet backbone. These connections allowed each college to participate over the network in either a point-to-point or multipoint video conference.

With all selected colleges participating, a series of technical tests are currently being performed. At the end of the individual tests, each college will complete a test report, describing the overall performance levels of the video network as observed at their site. The observers will be noting the reliability of ISDN and T-1 connections, ability to control the conference, as well as voice and picture quality. All data will be included in a final report to be filed with the Chancellor's Office at the completion of the project.

Included in the study is an investigation of multiple designs and management options for video-conferencing networks. One design being explored by the project emphasizes the location of video bridges at community colleges. This is particularly important in those cases where the college has a high interest in distance learning and has many remote locations to serve within their geographic area. The video bridges will be connected through the 4CNet backbone.

A second design option exhibits a more centralized version that locates video bridges at the 4CNet node locations. This option may be of interest to those colleges that serve smaller geographic areas or have predominantly statewide applications.

Also included in the study are three open forums. These forums will include interested faculty and staff at each college in a multipoint video-conference. The conference will examine important issues affecting future plans to construct a statewide video network. Among the issues to be discussed are:

- The need for each district to construct a telecommunications plan to support video-conferencing
- Future plans to transmit video on the 4CNet backbone
- Anticipated charges for video services over the 4CNet backbone
- Current thoughts on network design and configuration
- Developing budgets for leasing transmission lines needed to support videoconferencing
- The need to preserve dial-up capabilities in video network designs
- The application, cost, and operation of multipoint video bridges
- 4CNet vs. district responsibilities in the maintenance, operation and scheduling of video-conferencing facilities
- Identifying and implementing faculty and staff training needs

Butte College will collect the minutes of each meeting and will include them in a final project report to be filed with the Chancellor's Office on October 31, 1998.

Telemedicine Treats Patients From Afar

Eric Young
Staff Writer, Sacramento Bee

The age of the video doctor has arrived.

Doctors across the country are turning to video cameras, computers and high-speed phone lines that allow them to examine and monitor patients in far-off communities without ever being in the same room.

This so-called "telemedicine" movement has taken hold in Sacramento with physicians in the UC Davis Medical Group. Doctors sitting in a soundproof room in Sacramento can see and chat with patients in their doctor's offices in cities such as Chico or Vacaville.

The video linkup, with several clinics in Northern California, eliminates the need for patients to travel to Sacramento to see a specialist, and it allows UC Davis doctors to share their expert knowledge with distant general practitioners.

"What we wanted to do was essentially distribute the expertise that we have here at the UC Medical Center to the primary care physicians and their patients," said Tom Nesbitt, the doctor overseeing the UC Davis telemedicine program.

UC Davis doctors are using telemedicine during consultations about psychiatry, infectious disease, nutrition, dermatology, otolaryngology and a host of other specialties.

The system essentially works this way: Both the UC Davis specialist in Sacramento and the general practitioner in another city establish a live, color video hookup with each other. The doctor in Sacramento can watch and listen while the general practitioner examines a patient.

The Sacramento doctor can even examine the patient by using special scopes linked to the video camera that can magnify body parts or be inserted into the nose, mouth or ear.

> *"You think that technology is a way to distance yourself from people, but it's really a way to bring them together."*

Telemedicine consultations—which run counter to the traditional one-on-one intimacy between doctor and patient—raise some privacy and ethical issues for the doctors and patients involved. Physicians are required to get a patient's approval before such consultations. And doctors said they will not use them in emergency situations.

"The idea isn't to get away from patients," Nesbitt said. " Telemedicine won't ever replace face-to-face consultation completely."

But Nesbitt said the spread of telemedicine is a natural outgrowth of the emphasis placed on controlling medical costs. Doctors look to it as a way of quickly and inexpensively spreading expert knowledge to many patients.

"Without capitation, I don't think telemedicine would have gotten going as fast as it did," Nesbitt said, referring to a common payment system in which a doctor or hospital is given a maximum amount of money per person for health care.

Doctors said they still have a lot to learn about its use.

"We weren't sure if we could use telemedicine for psychiatry," said Don Hilty, an assistant professor of clinical psychiatry at UC Davis Medical Center. "There is a personal aspect of mental health care that is seen as critical... We weren't sure if they would be satisfied. Would there be a downgrade in terms of quality of care?"

What he and some other doctors found surprised them. Among patients, who agreed to use psychiatric consultations via video camera, there was a high rate of approval. Some patients told Hilty that they enjoyed the anonymity that telemedicine allows because they didn't have to worry about the stigma attached to entering a mental health clinic.

"You think that technology is a way to distance yourself from people, but it's really a way to bring them together," said Hilty, who consults with seven patients monthly using teleconferencing.

Some in the health care industry are predicting a big future for telemedicine, which started becoming commonplace in the early 1990s.

"We're looking at a phenomenal growth rate," said Jon Linkous, executive director of the American Tele-

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Satellite Update

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delaying indefinitely their decision on creating an uplink facility at their WestEd facility. Because of the new CSU policy not to move forward at this time, the CCC system needed to decide what direction to take concerning the future use of satellites in the delivery of distance education.

On May 12-13, 1998, the CCC Chancellor's Office convened a meeting in Sacramento of the satellite subcommittee to meet with Carmel Ortiz, the consultant from Skjei Telecom, Inc. Representatives from CSUSAT, CSU Chico, CSU Sacramento, and several technical and academic staff from a number of community colleges also attended the meeting.

Mrs. Ortiz spent all of the first day and most of the second walking the group through the following points: (PowerPoint presentation slides are available at *http://www.cccco.edu/ESED/ir&t/tnt/Sat/CARMEL02/index.htm*):

- Fundamentals of satellite-based distance learning networks
- Determining network requirements
- Technology issues in satellite video networks
- Developing a business case for a satellite video network
- Steps required to implement a satellite network

LeBaron Woodyard (CCC Instructional Services and Technology dean) pointed out to the group that building the uplink facility was the easiest of the tasks ahead. He further pointed out that the programming and marketing tasks were actually the most difficult.

Mr. Woodyard spent the remainder of the second day leading a group discussion on the marketing tasks for the programs to deliver on the CCC satellite network. These included:

- Produce a marketing analysis
- Identify the target markets
- Profile customers for each market
- Analyze and profile the competition
- Understanding the product
- Setting the right price
- Analyzing the risks
- Sales plan
- Sales forecasting
- Sales Budget
- Managing sales
- Sales channels

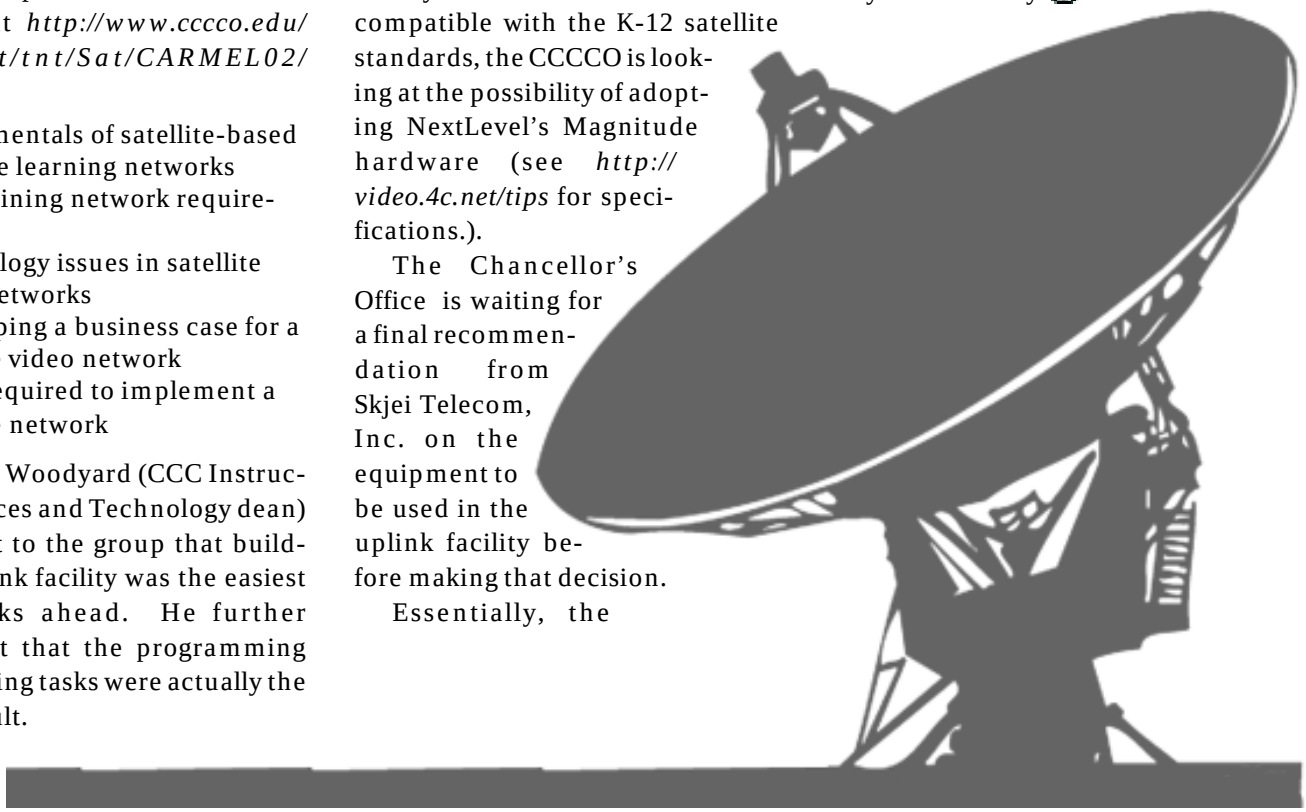
Mr. Woodyard finished by discussing the requirements needed in the RFA to build a CCC satellite uplink facility and marketing the programs that will be broadcast by the facility. Because of the desire to be compatible with the K-12 satellite standards, the CCCCO is looking at the possibility of adopting NextLevel's Magnitude hardware (see *http://video.4c.net/tips* for specifications.).

The Chancellor's Office is waiting for a final recommendation from Skjei Telecom, Inc. on the equipment to be used in the uplink facility before making that decision.

Essentially, the district/college awarded the RFA must:

- Enter into an RFP with a contractor to actually build the facility
- working alone or with other colleges in a consortium, develop plans for
  - managing the uplink facility
  - creating programming or licensing existing of programs from the colleges, PBS, and other educational and commercial sources
  - marketing the uplink facility and the CCC system's programs

The Chancellor's Office anticipates releasing the RFA by mid-August 1998. Once the RFA is released, a series of video workshops with colleges will be scheduled to answer questions regarding the RFA. It is anticipated the RFA will be returned by early January and scored by mid-January.



Telemedicine

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medicine Association in Washington, D.C. Hospitals and clinics in the United States spend anywhere from $100 million to $300 million on telemedicine equipment and services each year, and that figure will grow at a rate of 15 percent annually over the next five years, the association estimated.

Prisons are likely sites to see increased use. In Sacramento, UC Davis Medical Center doctors already use telemedicine in the county jail. Telemedicine consultations reduce the number of times a prisoner has to be driven to the UC Davis Medical Center and cuts down on the number of escapes that might be attempted, officials said.

Even as telemedicine spreads, there is still some resistance among health plans nationwide to pay for its use. Some plans don't cover consultations at all, while others cover only some.

But doctors in California have made some headway. Under the state's Telemedicine Act of 1996, doctors can charge for a telemedicine consultation, removing a prior requirement that doctors meet with a patient in order to bill for services. MediCal will pay for some telemedicine consultations, and some private insurance companies are beginning to pay.

Contribute to TIPS *News*

TIPS News focuses on projects funded by the California Community Colleges Chancellor's Office involving technology in education, as well as other issues concerning distance education in California, including videoconferencing and online learning.

If you have an article suitable for publication in *TIPS News*, or if you are interested in writing material, contact:

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