Novell Technology Transfer Program Comes to CEDPA Members

Listserver: Software supports information broadcasting over the Internet.

Warren Williams, Grossmont Union High School District

Novell established a program called TTP (Technology Transfer Program) several years ago for various colleges and universities across the nation as a method of sharing technological questions and concerns regarding the planning, implementation and use of Novell products within the higher education environment. Over this time, the TTP has grown in membership to over 80 participating higher education institutions. This has become a particularly effective mechanism for the technical staffs at these universities to "broadcast" numerous technical questions and concerns to the other members who can then respond with comments and more importantly, answers as to how they have solved these issues in their respective environments. The TTP has been especially effective in the solution of many problems that have been of common concern to many of the other members and has lead to much faster resolutions that would have required direct involvement of Novell technical staff and has saved both time and money.

At the infrastructure of the TTP is a centrally controlled and administered NetWare 4.11 IntraNet "list server" under the watchful eyes of David Cantrell, Senior Engineer for Novell Education Department who resides in the Novell Washington D.C. office. The basic premise operates using GroupWise E-Mail and is accessed by way of the SMTP/MIME Gateway to allow access from any Internet connection from any member or directly from

GroupWise. As a TTP member, you would automatically receive every message sent to the list server, and would have the opportunity to read, respond, save, delete or append any message. In addition, there are a number of Novell personnel who receive "blind copies" of all messages, including Joe Rodehaver, Novell's Western Area Manager for Education who can then monitor activity within his regional perview. During a typical day, there are 12-15 issues addressed on the TTP with anywhere from 4-5 answers for each of these issues from TTP members, normally within several hours of first appearing on the TTP list server.

In This Issue:

CEDPA Information

CEDPA is an association of Educational Data Processing Professionals (technologists) within the State of California. Founded in 1960, the major emphasis of the association's activities are directed towards improving Administrative Information Processing in public education within the State of California and to prepare its membership to better meet and support the technological needs of the Instructional Program.

CEDPA is a California non-profit corporation, as recognized by the Internal Revenue Service.

As cited in CEDPA's bylaws, the purpose of this organization shall be:

(a) To provide information to the California public educational community concerning educational data processing via dissemination at an annual conference and through periodicals and special interest seminars.

(b) To foster the exchange of knowledge of educational data processing concepts, systems and experiences between educational data processing installations and other associations both at the state and national level.

(c) To inform the association membership of important information concerning educational data processing.

(d) To provide recommendations to the State Department of Education, State Legislature, school districts, County Offices of Education and other public educational organizations concerning educational data processing.

(e) To develop professional standards for the Educational Information Systems Community within the State of California.

Yearly membership in CEDPA is granted to attendees of the Association's annual conference. Individuals interested in the Association's mailings may request to be added to CEDPA's mailing list by writing to the address below or filling out the interest form at CEDPA's website.

The DataBus is published bimonthly by the California Educational Data Processing Association and is distributed without charge to all members of the association and other selected technologists within the State of California who are interested in information systems processing and technology in education. Submissions, correspondence, and address changes should be sent to the editor at:

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Electronic editions of *The Databus* are available from CEDPA's website at **http://www.cedpa-k12.org**

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President's Corner

Greg Lindner, Yolo County Superintendent of Schools

What's new with CEDPA? Quite a bit actually. We are very close to having in place a listserver *(see related article-Ed.)*. We are meeting with another association to leverage our two strengths to play a bigger role with Technology in California K12 Education and we are making progress on our Minimum Threshold of Computer Equipment document.

The listserver that is almost in place will allow us to setup a CEDPA listserve group. This will allow people to autosuscribe and then post and receive messages of interest to CEDPA members. We envision this as an excellent way to share information with each other and to gather information from each other. How many times have you wished you had a way to ask your peers, "What are you using for an email server?" or "Who has found the best price on xyz's software product?", or "Our district is thinking about migrating to Schedule+ but we need both our Macintosh's and PC's to be able to access calendars - has anyone done this?". I think you can see the CEDPA Listserve will be beneficial to all of us in the K12 Technology Arena.

Recently members of the CEDPA Board had an introductory meeting with members of the CASH (Coalition for Adequate School Facilities) Board. The purpose of the meeting was to discuss how we both might benefit from a closer association. Currently, technology is receiving quite a spotlight for facilities upgrades and for Technology acquisition and training. We have found ourselves too many times on the implementation end of legislation and really haven't had a significant impact on shaping legislation so that it meets K12 Technology needs.

A recent example is the exclusion of Frame Relay from the PUC Rate reduction. A great majority of districts and county offices of education connect to the Internet via Frame Relay although Frame Relay was not part of the original reduction. Current efforts are underway to add it. However, had we shown more of a unified presence, perhaps Frame Relay would have been included when the original document was drawn up.

CASH has been very effective in working with the legislature and the SAB (State Allocation Board). Our goal is to continue discussions with them and to possibly form a partnership whereby when legislation occurs re-garding K12 Technology, CEDPA is at the idea stage and not at the implementation stage. Many times issues come up and the legislature has no one to turn to for a technical viewpoint. What better group to turn to than CEDPA? There are many issues to resolve and to discuss on this subject. As stated, we have had an introductory meeting but feel there are many benefits to a partnership for both CASH and CEDPA. I will keep you up-to-date on these discussions as they progress. Please pass along your thoughts to me (glindner@yolo.k12.ca.us) about how you feel this would benefit or not benefit our organization.

Our *Minimum Threshold of Computer Equipment* is coming along, albeit rather slowly. This list will contain criteria that will assist schools and districts in establishing minimum standards for the computers they purchase. Minimum is meant in this instance as, "the minimum computer you should purchase if you want to do the following is: ....". CEDPA has already put together a working committee on this project. Once the initial analysis has been completed, the board will review the minimum guidelines and seek input from the association. The final minimum thresholds will be placed on the CEDPA home page **(www.cedpa-k12.org)** for the benefit of all K12 education. If you already have a list similar to this, please share it with me (glidner@yolo.k12.ca.us)

As I said in our last newsletter, I am excited about CEDPA. I feel this year brings us to a cross-roads. We are in a position to enhance the effectiveness of our organization. Tools such as our listserver will allow us to communicate state wide in a fraction of the time it took us before. CEDPA is also starting to gain recognition when it comes to Technology Issues in the California K12 environment. To repeat what I have said before:

> *"Our members are the people who design, plan, implement, support, and manage every network in K12 Education today. We have solved or know someone who has solved thousands of technical problems. We know what works in a small, medium and large organization. We know who to go to for help, and who to stay away from. We know how to get discounts on equipment and how to get training. We know and understand the issues of security, data reliability and supportability. Our members work in almost every County Office of Education and District throughout the state and in several school sites."*

Telecommunications Services—50 Percent Off Without Clipping Coupons

Program: California Teleconnect Fund (CTF) provides reduced connectivity rates for schools and libraries within California.

Way Jane Wong, California Department of Education

MONEY! Although I try to minimize the importance of money at times, it will always surface as an important element to meeting a goal. I am almost always in constant pursuit of more favorable ways to conserve my stash of cash by looking at what expenses I can reduce. I would rather spend more money on the many pleasures of life than to have it gobbled up by costs to sustain a sterile environment. Wouldn't it be nice if someone offered to help pay for a portion of your monthly phone bill? That could translate into MORE MONEY for other purposes! Well, the SCHOOLS and LIBRARIES can count their lucky stars! Schools and libraries now have a terrific opportunity to potentially reduce some telecommunications costs. So how can schools benefit?

The California Public Utilities Commission (CPUC) created a program called the California Teleconnect Fund (CTF) which began on February 1, 1997. A telephone usage surcharge supports this $40 million annual program. CTF subsidizes the telecommunications carriers to provide a 50 percent discount to all eligible K-12 schools and libraries. The telecommunications services that have been identified as being eligible for the 50 percent discount are 1 MB (measured business rate), switched 56, ISDN, T1, and DS-3-services, or their functional equivalents. For example, if your school is paying a monthly ISDN service line charge of $75 per month, your cost would be $37.50. The carrier would be reimbursed from CTF for the difference. These discounts are applicable for new services, existing contract services, or tariffed services. However, the discount does not apply to installation or usage costs.

You should check with your existing carrier, or their competitors, to determine the status of your telecommunications services. If you subscribe to services that qualify for the discount or could potentially qualify, your carrier is responsible for helping you complete the application and submitting the form to the CPUC. For example, if you use frame relay, and frame relay is not one of the services specifically identified as an eligible service to be discounted, it has the potential to be discounted. It is up to the carriers who offer the services, to file a tariff with the CPUC to request that their frame relay service be considered a functional equivalent. The carriers have nothing to lose, because if the CPUC grants their request, they will be reimbursed from CTF. However, if the carrier does nothing, and you don't take the initiative to inquire, your school may lose out on a service that could potentially be discounted. This could translate into money saved that could be used for other purposes.

Apparently, the CPUC has not received as many application requests from the schools/school districts as anticipated, to take advantage of CTF. There was initial concern that there would be an avalanche of requests, that the annual designated funding amount may be insufficient, and schools should realize that the discounts would be applied on a first-come-first-served basis. So far, none of this has happened. If you are a school that is aware of CTF, but you are not participating in this program discount, I would be very interested in knowing your reasons for not participating. If you are participating in CTF, let me know what you are saving!

Check it out! If you have any comments or questions, feel free to E-mail me.

Way Jane Wong is with K-12 Network Planning at the California Department of Education and may be reached at (916)657-4500 or by e-mail at wawong@cde.ca.gov.

COMING EVENTS

- SIG Meeting (North)
    June 12, 1997
    Yolo County Office of Education
- SIG Meeting (South)
    July 24, 1997
    Orange County Area
- Annual Conference
    October 29-31, 1997
    Radisson Hotel, Sacramento

Internet Products Launches the InterGate Solution

Servers: New models feature Pentium and Pentium Pro CPUs and advanced capabilities.

Dan Shahbazi, Internet Products, Inc.

Internet Products, Inc. recently announced the release of the 5200 and 6200 series InterGate Solution, two new plug-and-play Internet server models that feature Pentium and Pentium Pro technology along with enhanced data protection capabilities.

The 5200 series InterGate Solution harnesses a Pentium processor, and a Pentium Pro processor powers the 6200 series Internet server. Each device includes RAID disk mirroring and redundant power supply options. According to company president Farley Stewart, the new InterGate Solution offers a more robust hardware configuration with the added benefit of data and power protection.

"Disk mirroring," Stewart said, "gives our customers an automated way to store data twice on InterGate to ensure that the possibility of data loss is no longer a factor. "We have also incorporated a redundant power supply to further enhance InterGate as a high availability server."

Internet Products has begun manufacturing the new models in preparation for increased demand from the educational market. "The new models give our educational customers more power and protection for their Internet connections," Stewart added. "Pair this with 12 Internet services that are integrated in the InterGate Solution, and we have successfully bridged the past with the future of Internet server technology."

Each InterGate Solution model includes pre-installed InterGate version 2.5 software, which provides COEs, districts and schools with a Web-based management interface to administer to each Internet service in a point-and-click environment.

The server incorporates Web, E-mail, DNS, FTP, News and Dial-up servers. It also includes performance enhancing Web site proxy and caching, which help to reduce an organization's Internet access costs. Additionally, security features are integrated that provide firewall filtering, Web site access filtering and remote dial-in authentication.

Internet Products released the first InterGate in 1993 and was the first company to develop a plug-and-play Internet server. Since then, according to Stewart, the company has successfully grown to become the premier source of Internet server technology for the California educational community.

Dan Shahbazi is Public Relations Manager for Internet Products, Inc., and may be reached by telephone at (619) 576-4100 x 100 or by FAX at (619) 576-4111. His e-mail address is dan@ipinc.com.

February SIG Meeting Summary

Eric Boutwell
San Francisco Unified School District

The Northern SIG meeting was held on February 21, 1997, and hosted by Cisco Systems, Inc. The theme was "WAN Design Considerations That Take Into Account the New PUC Pricing for K-12 Telecommunications". Cisco provided technical personnel to answer questions and as always we were able to draw from the experiences of the CEDPA members present . We discussed in depth ISDN vs. Frame Relay vs. Point-to-Point T1. With the current CPUC discount plan excluding Frame Relay the group of 21 CEDPA members are strongly considering migrating their networks to Point-to-Point T1. If or when Frame Relay is added to the discount plan, many members would use it as the preferred method for connectivity. We ended the meeting by analyzing each participant's network and discussing as a group how we would change the design taking into consideration the new pricing.

For the latest information on PUC pricing see the California department of Education web page at http://goldmine.cde.ca.gov.

Thank you to those who joined us and contributed to the discussions. The next SIG meetings are tentatively scheduled for June 12 in Yolo county and July 24 in Orange County.

Trade-in, Trade-up, Promotional Programs Announced by Cisco Systems

Equipment: Vendor offers many opportunities to upgrade to Cisco's current products.

Sue Mangiapane, Cisco Systems

Several trade-in, trade-up and promotional programs have been announced by Cisco Systems, Inc., to encourage Cisco customers or owners of competing products to upgrade their existing equipment to Cisco's current product offerings. Here is a summary of currently-available programs.

Access Server Trade-in
Expires: June 30, 1997

Customers are able to trade-in competitor's access server equipment and older generation Cisco access servers for credit toward the purchase of qualified new access servers.

AS5200 Coupon Program

Cisco rebate coupons available to apply toward product, training, or cash discount.

AS5200 Free 56K Upgrade Program

For a limited time, all AS5200s sold will receive a Free Upgrade to 56K modems as soon as the technology becomes available. Offer can be combined with AS5200 Coupon Program.

Dump-a-Blade
Expires: No date set

Trade-in Cabletron Blades for discount on FE or ATM Cisco solutions.

CORE PRODUCTS

Alphabet Router Upgrade
Expires: July 31, 1997 (extended)

Cisco Systems offers an Alphabet Router Upgrade Program available to IGS, 2000, 3000, MGS, AGS, AGS+, and CGS customers toward the purchase of Cisco 2500/4000 series routers.

RP/SP to RSP Promotion

Customers are able to trade-in their RP and S(S)Ps to the RSPXs for credit towards the purchase of UPG-RSP7000 boards. IP to VIP is also part of this promotion.

VIP1 to VIP2 Upgrade
Expires: No date set

Allows for a migration path for customers using the first generation Versatile Interface Processor (VIP) platform.

XGS to 7x00 Upgrade
Expires: July 31, 1997

Cisco's XGS Trade in Program includes a path for customers to trade in their XGS's (AGS, AGS+, MGS, CGS, IGS) platforms to Cisco 7000, Cisco 7500, or the newly introduced Cisco 7200 series systems.

7000/7010 Trade In
Expires: July 27, 1997

Cisco is pleased to announce the introduction of the Cisco 7000/7010 Trade in Program providing a migration path for customers to trade in their 7000/7010 platforms to Cisco 7505, 7507, or Cisco 7513 series systems. The program also allows customers to trade in existing Interface Processors (IPs) for new VIP2 models.

CIP to CIP2 Trade-up
Expires: April 30, 1997

Cisco Systems is offering a program to existing users of the CIP (Channel Interface Processor) to trade up to the CIP2.

WAN PRODUCTS

Trade-in a TDM Promotion
Expires: August 31, 1997 (extended)

Customers may purchase any of the IGX family of switches to replace existing TDM equipment and receive a purchase credit for the decommissioned switches which are returned to Cisco.

WORKGROUP PRODUCTS

Catalyst 1600/1800 Trade-up
Expires: May 31, 1997

The Catalyst 1600 Trade-Up Program allows cus-

Desert Sands Unified School District's Award Nomination–A Closer Look

Honor: A closer look at the district's technology planning and events.

Dr. George Araya, Desert Sands Unified School District

Editor's note: The last issue of The DataBus *featured a lead article about the Computerworld Smithsonian Award nomination received by the Desert Sands Unified School District for their accomplishments in technology. This month presents an expanded look into the district and the events surrounding their nomination.*

The Celebration

Desert Sands Unified School District wants to make their nomination one of the most outstanding events in the history of our region. Because of their nomination many other districts in the nation are considering Desert Sands Unified School District design as the model for their own implementation. During the week of April 28 to May 2 Desert Sands USD will have hands-on seminars that will help others in their technology projects. On May 1st we will have a seminar for all school districts in California that want to review the awarded technology implementation. Some the sessions will be directed by Riverside County Office of Education and two sessions from the State Office of Education. The main emphasis of these sessions will be: minimum components for successful grant applications, State plans for school technology implementation, and an overview of State plans for future technology implementation.

On May 2nd we would like to conclude the week with "Future of K-12 Education and Technology" forum by the CEOs of the companies and possibly Mr. Pete Wilson, California Governor. The companies included in our network and invited to participate are Microsoft, Kodak, Cisco, 3Com, Allied Telesyn, View Tech, Meridian, New Technologies, Pentamation, Microwave Bypass, Applied Computer Systems, and Ansi. The Computerworld Smithsonian Awards program will give recognition to the Board of Education on that day.

Description of the Project

The main focus of our technology project was to design a computer network for transmitting data and video that could serve 23 schools and over 20,000 people with $5 million over a five-year time period. The challenge was to deliver high speed that would enable students and teachers to spend more time learning and teaching than waiting for the computer.

In June 1993, after thoroughly researching what networking strategies were available, we decided to use microwave technology. Through microwave we can transfer data at 10 million bits per second for the computer network, full motion video/audio for video conferencing, and voice for telephone. Microwave technology proved to be more reliable, more cost-effective, faster and easier to maintain than leased telephone lines. Another advantage was that after five years, the microwave equipment would be paid for without the recurring fees experienced with lease lines.

With the cooperation of Riverside County, the first six microwave links were installed in Indio in February 1994. These links, constructed by Microwave Bypass Inc., of Braintree, Mass., connected the easternmost and westernmost schools, and connected the resulting network to the central microwave repeating site at Riverside County's Larson Justice Center in downtown Indio. By April 1995, 19 links were in place and all district sites were on line, with e-mail and the new student management software in operation.

A six-city metropolitan microwave network allows every classroom and office in the Desert Sands Unified School District access to a variety of high-technology applications at high data transfer speeds. Students and staff have access to the Internet at speeds of 10 million bits per second, which allow them more time to work on projects or teach classes rather than wait for a slow network connection delivering data to their computer. Most analog telephone lines take five to 30 minutes to download one page of information, whereas our network takes only seconds. Students and staff also have access to shared technologies such as our fully loaded Kodak imaging center, a Kodak high speed printer capable of printing 92 pages a minute, Meridian CD towers, students and financial programs and important district information on our internally networked servers.

Because of the high data transfer speeds of micro-

Pacific Bell adds Primary Rate ISDN to Existing Free Offer to Schools and Libraries

Program Expansion: Pacific Bell further enhances Education First.

Pacific Telesis Internet News Service

On March 18, 1997, the California Public Utilities Commission (CPUC) approved Pacific Bell's request to further enhance its Education First offer to California schools and libraries by allowing Pacific Bell to offer Primary Rate ISDN (PRI). PRI will make Internet access easier and even more affordable for California schools and libraries participating in Pacific Bell's Education First program.

Currently, schools and libraries can request up to five free basic rate ISDN lines as part of the Education First program. One of these lines is used to connect a school to its district or county education office, where Internet traffic is aggregated and then dispersed via a "bigger pipe" to the Internet. The Education First offer, which includes one year of ISDN service, will now include PRI and the T1 line at these aggregation points, or "hubs." Since less equipment is required, PRI is a more efficient and cost-effective way for schools and libraries to explore the information superhighway.

The goal of Pacific Bell Education First initiative is to help ensure that every school and library in California has a digital on-ramp to the information superhighway by the year 2000. The program offers free installation and one year free service of Integrated Services Digital Network (ISDN), along with technology workshops for teachers and librarians, assistance with curriculum development and discounts on equipment. After the first free year of usage, Education First institutions also are eligible for Pacific Bell's Universal Service discount.

To date, Education First has wired more than 3,000 schools and libraries with high-speed digital lines. Another 1,800 schools are connected to the information superhighway using other digital services from Pacific Bell. Schools interested in signing up for the Education First offer should call 1-800-901-2210 before December 31, 1997 to apply for the program. Pacific Bell is a subsidiary of Pacific Telesis Group, a diversified communications corporation based in San Francisco.

Listserver

Subsequent to the last CEPDA meeting in Palm Springs, Warren Williams from Grossmont Union High School District, has been negotiating with Novell to engage in piloting a Novell TTP for the State of California K-1 2 educational entities as a service offered by CEDPA to interested members who may have an interest in joining the CEDPA Novell TTP. Warren has volunteered to host the TTP List Server at his location in Grossmont and will provide the control and management of the server. He will be responsible for maintaining the addition and deletion of member access to the TTP server as well as the general administration of the server software. Novell will be closely watching the success of the CEDPA Novell TTP, as they would like to be able to " roll" this out nationwide to other states where similar organizations such as CEPDA prevail.

Both Novell and CEDPA feel that this is an outstanding opportunity for CEDPA members to have easy and effective access to a "clearing house" of technical issues that relate to Novell products and will provide a most cost effective manner in which to address those difficult problems that would normally cost the users a technical incident call from Novell. Not to mention the cost of downtime and personnel time in the resolution of problems that may have already been addressed by another CEDPA member. CEDPA would like to start this pilot Novell TTP with an anticipated start date of March 1, 1997. Any interested CEDPA member should contact Warren Williams for details on sign-up necessities.

Speakers Wanted

CEDPA is putting together its 1997 Fall Conference breakout session program. If you have a topic you'd like to present to our attendees, please sign up! We're especially interested in your experiences with network connectivity, Windows NT or Novell networking, new or emerging technologies, help desk support, data warehousing, or instructional technology.

A breakout session typically lasts for 45-55 minutes and can seat up to 50 conference attendees. If you're interested in speaking, please sign up with Warren Williams, this year's speaker chairperson. Use the enclosed form to sign up or contact Warren directly.

Desert Sands

(Continued from Page 7)

wave equipment, we were able to implement such highly sophisticated and network-intensive software applications as the following:

    a. A student management system (Pentamation) that consist of student registration and demographics, discipline tracking, daily and class attendance, class scheduling, mark reporting, graduation requirements tracking, transcripts and student information snapshot.

    b. A financial management system (Pentamation) that consist of purchasing, on-line requisitions, warehouse inventory and fixed assets.

    c. A student lunch program that records the number of students that order meals and to determine the amount of free lunches. Prior to the automated system, cafeteria personnel conducted the daily task by hand.

    d. Transportation software, designed to route buses and control bus schedules.

    e. Facility planning and work order processing systems, which will enable district personnel to track service repairs in a timely manner

    f. Meridian CD towers, which store collections of on-line references including encyclopedias, class notes, foreign language learning programs as well as specific software programs

    g. Full, unlimited Internet access

All of these services, together with the resources of a fully functional Kodak digital imaging center at La Quinta High School, can be accessed from any networked computer at any district site.

While the network installation was in progress, staff training began. Each school sent four teachers to a computer class where they were trained on how to build a multimedia computer cart and how to incorporate multimedia into their curriculum. The teachers built their computers from pieces: they installed the motherboard and drive cards, loaded multimedia software, connected a Laserdisc player, connected an LCD panel for an overhead projector and learned how to troubleshoot IBM-compatible computers. Once they completed their multimedia computer carts they were trained on how to prepare multimedia presentations, including multimedia lesson

design and incorporation of the design into their lesson plans utilizing CD-ROMs and Laserdiscs. After the training, teachers took their multimedia carts to their schools and began sharing their knowledge with their peers. On-going personnel training continues for all district employees. The original goals that were established at the onset of the technology plan have been met. The entire district is networked and every teacher and employee has Internet access and standard software. Our microwave metropolitan area network is fully operational. Schools and administration offices are all on-line. Every teacher has at least one computer in his classroom, connected to the network. Approximately 20,000 people are receiving benefits of the microwave network. Students, teachers, classified personnel, counselors, administrators and libraries have access to the Internet, e-mail, and Microsoft software. Students and teachers are taking advantage of the communication possibilities and working on many different projects. The computers are becoming one of the best tools for improving the teaching and learning in the classroom.

The future plans are the most important consequences of the accomplishment of this project. Because of the caliber of the network we have tremendous opportunity to become involved in truly incredible projects. For example:

    a. The Eisenhower Medical Center is connecting their network to ours via microwave. The Desert Sands Unified School District will provide Internet access to all employees of the medical center. The microwave video link between the hospital and our district will allow live video communication for our classrooms. Classes related to health will have the option to integrate sources from the medical center into the curriculum.

    b. Some teachers of college-preparatory classes will teach for one school while students from the other high schools will attend through video. The live video communication will allow students to participate actively in those classes without being in the same classroom.

    c. A full integration of surrounding businesses and school-related curriculum activities are planned to begin the next academic year. The

4Cnet–The California State University and California Community College Collaborative

Network: CSUnet ATM backbone combines with Community College video and satellite services to support increasing demands of California colleges.

Michael McLean, CSUnet

The California Community Colleges (CCC) received funding in the 1996-97 fiscal year to assure that each of its 106 campuses and 19 administrative centers establish necessary infrastructure capability for connection to the Internet, video conferencing and satellite downlink. CSUnet was identified as the provider for Internet services. The Community Colleges Chancellor's Office is coordinating the video conference and satellite downlink efforts.

The CSU and CCC have subsequently established a collaborative relationship to create 4Cnet, the California State University and California Community Colleges Network. 4CNet is an expansion of CSUnet which was established in 1984 by the California State University (CSU) system as a dedicated data network linking each of the campuses of the CSU. The network was created as one of several efforts to meet the increasing information technology demands of the University system and its campuses throughout the State. The addition of the Community Colleges to the network will afford both systems a resource to serve their academic and administrative mission, goals and objectives in ways that exploit centralized and distributed information resources.

4Cnet will provide a T-1 data connection from each community college site to a node on the 4Cnet backbone. The 4Cnet backbone is designed using ATM and DS-3 connections between each of ten network nodes placed at CSU campuses and administrative centers throughout the state. The planning and design of the new network includes the interconnection of high speed circuits throughout the state from Pacific Bell, General Telephone and TCG. The primary telecommunications equipment is from FORE for the Asynchronous Transfer Mode switches at the hub sites and from Cisco for the hub and individual site routers. Installation of 4Cnet sites will begin the first week in April and it is expected that all participating Community College sites will be completed as early as the end of the 1997 calendar year.

The preliminary model for connection of community college sites called for individual connections to 4Cnet for each campus. As the planning for the project progressed, many of the 19 multi-site community college districts expressed a desire to serve as hubs for their constituent campuses in order to better fit with district-wide technology plans. Consequently, many of those 19 districts have been identified as 4Cnet hub sites and will be provided with a higher level of service such as multiple T-1 connections and larger routers. The districts will in turn provide connections to their constituent campuses. Such a model not only provides Internet connection for campuses, but of equal importance makes use of or enhances the intra-district communications network.

Michael A. McLean is Manager of Customer Service Support for CSUnet, a service of the Telecommunications Infrastructure Support Services Group of the CSU Chancellor's Office. He can be reached at the address below.

What is CSUnet?

CSUnet is a private statewide network that provides data and video connectivity to all of the California State University campuses and the CSU Chancellor's Office locations. CSUnet is supported by the Telecommunications Infrastructure Support Services (TISS) group within the Information Resources and Technology (IRT) division of the California State University Chancellor's Office. In addition, CSUnet provides Internet connectivity services to many public agencies, county K-12 offices of education, and local school districts throughout California. A partial list of the agencies served by CSUnet appears on the CSUnet website at **http://www.csu.net/html/csunetsubs.html.**

The California Department of Education recommends connectivity of local school districts through their county offices of education for Internet access. However, if your county office of education cannot provide this connectivity, it may be possible to connect directly via one of the CSU campuses. Contact CSUnet directly by telephone at (562) 985-9533, by email at help@csu.net, or by postal mail to:

The California State University
P.O. Box 3842
Seal Beach, CA 90740-7842
Attn: Mike McLean,
Manager, CSUnet Customer Services

Proposed 4CNet Upgrade (Phase II)

DaveReese
February 24, 1997
dave@csu.net

45Mb ATM
45Mb IP only
T-1
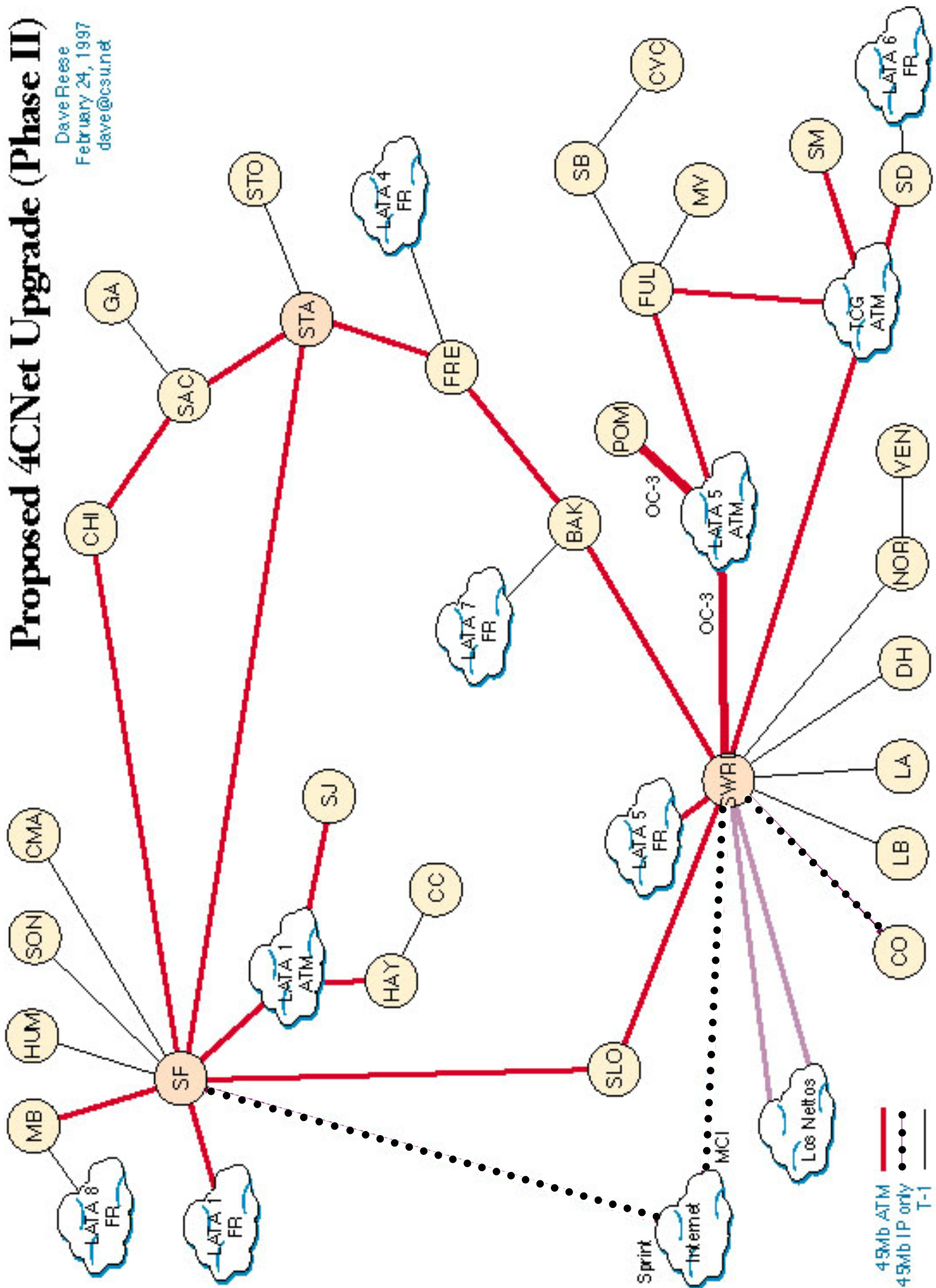
Desert Sands

chambers of commerce from the different cities are working toward this goal. Our World Wide Web page has links to the major businesses surrounding the district.

d. The intranet is in operation and permits schools and classrooms to create their own projects that include distant learning, web pages, student projects, on-line lessons for students, a database of lesson plans in different subject areas for teachers, a database of best web sites for teachers, and on-line information for parents. Parents will soon have access to our intranet to check student assignments, grades and school activities from their home computers. Students will be able to post their assignments for their teachers from home.

Dr. George Araya is Technology Coordinator for the Desert Sands Unified School District. He can be reached by telephone at (619) 775-3500, by Fax at (619) 775-3542, or by e-mail at george@surf.dsusd.k12.ca.us. Desert Sands Unified School District's website is at www.dsusd.k12.ca.us.

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Sue Mangiapane is Account Manager for Cisco Systems, Inc. She can be reached by telephone at (714) 789-5006, by FAX at (714) 789-5005, or by e-mail at smangiap@cisco.com.

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