



**CALIFORNIA
EDUCATIONAL
DATA
PROCESSING
ASSOCIATION**

**THE
DATABUS**

“Serving California’s Public Education Technologists”

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ISDN vs. Spread Spectrum—Part II

Networking: Radios provide increased bandwidth and better support for Novell IPX.

Terrell Tucker, Panama-Buena Vista Union School District

The Panama-Buena Vista Union School District has been providing Internet access to schools for one year. We began providing the access with ISDN telephone service, then installed a spread spectrum link to an elementary school in the spring of 1996. As indicated in the Part I article (*see The DataBus, June-July, 1996, “Spread Spectrum Wireless vs. ISDN, Part I”-ed.*), the district is pleased with the performance and reliability of the original wireless link. Unfortunately, we felt the cost was too high.

We have since installed spread spectrum links to each site previously connected with ISDN. The new equipment is made by Breeze Com and is capable of providing 3 mb of bandwidth. Two omni-directional antennas were installed at the District Office, each receiving signals from 3 schools. Our intent was to limit the number of antennas at the District Office since we plan to install a link to all 18 schools. We plan to add new schools onto the existing antennas until throughput is diminished, at which point we will add another omni-directional antenna. Sharing three sites over one antenna has proven to be more than acceptable.

Numerous problems have been encountered, primarily due to the use of omni-directional antennas. Due to the nature of the antennas, distance is severely limited. The farthest link is approximately 2 miles and the closest is one-third mile. Signal strength is very limited at greater distances, especially when a lot of mature trees are in the

signal’s path. The bandwidth realized seems to vary from a minimum of 1 mb up to 3 mb at the closest site. It is important at this point to realize that even though bandwidth is limited at some sites, it is still far greater than the bandwidth provided through ISDN. We have seen dramatic increases in the speed of delivery of IPX packets. We found ISDN to be unacceptable for Novell server maintenance over ISDN links.

The most pleasing aspect of our new “experiment” with wireless links is the price. Including installation, the cost of a wireless link at a school is approximately \$3,200. This only includes the equipment on the school’s end. After including the cost of omni-directional antennas at a central site, the cost is still less than \$5,000 per site. The

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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.

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CEDPA
P.O. Box 6552
Huntington Beach, CA 92615-6552

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President

Greg Lindner, Director, Information and Technology Services

Yolo County Superintendent of Schools
1240 Harter Avenue, Woodland, CA 95776
(916) 668-3738 FAX:(916) 668-3848
Internet: glindner@yolo.k12.ca.us

Past-President

Ken Jones, Technology Director
Lodi Unified School District
1305 East Vine Street, Lodi, CA 95240
(209) 331-7212 FAX:(209) 331-7039
Internet: kjones@lodiUSD.k12.ca.us

President-Elect

L. Russ Brawn, Project Manager
WestEd
730 Harrison Street, San Francisco, CA 94107
(415) 565-3046 FAX:(415) 241-2777
Internet: rbrown@wested.org

Secretary

Jane Kauble, Staff Services Manager
Los Angeles County Office of Education
9300 Imperial Highway Downey, CA 90242-2890
(310) 922-6141 FAX:(310) 922-6145
Internet: Kauble_Jane@lacoed.edu

Treasurer

Judy Acosta, Student Systems Support Manager
Ventura County Superintendent of Schools
5189 Verdugo Way, Camarillo, CA 93012
(805) 383-1954 FAX:(805) 383-1997
Internet: acosta@vcss.k12.ca.us

DataBus Editor

Addison Ching, IDA Technical Project Manager
California State University Chancellor's Office, IRT-CIS
P.O. Box 3842, Seal Beach, CA 90740-7842
(310) 985-9604 FAX:(714) 968-9574
Internet: addison@calstate.edu

Directors

Mike Caskey (1997), Data Processing Director
Stanislaus County Office of Education
801 County Center III Court, Modesto, CA 95355
(209) 525-5095 FAX:(209) 525-5112
Internet: mcaskey@stan-co.k12.ca.us

Darryl La Gace (1998), Director of Information Systems
Lemon Grove School District
8025 Lincoln Street
Lemon Grove, CA 92045
(619) 589-5734 FAX:(619) 462-7959
e-mail: d_lagace@lgsd.k12.ca.us

Terrell Tucker (1998), Director, Data Processing
Panama-Buena Vista Union School District
4200 Ashe Road
Bakersfield, CA 93313
(805) 832-8331 x144 FAX:(805)398-2141
Internet: tt@pbvUSD.k12.ca.us

Warren Williams (1997), Director, Computer & Technology Services

Grossmont Union High School District
P.O. Box 1043, La Mesa, CA 91944-1043
(619) 465-3131, ext. 295 FAX:(619) 462-7420
Internet: wwilliams@grossmont.k12.ca.us

SIG Chairperson

Eric Boutwell, Manager, Applications Development
San Francisco Unified School District
135 Van Ness Avenue, Room 300
San Francisco, CA 94102
(415) 241-6169 FAX:(415) 431-8434
Internet: eboutwe@sfUSD.k12.ca.us

President's Corner

CEDPA Focus: Coming year will further efforts to enhance K-12 classroom technology.

Greg Lindner, Yolo County Superintendent of Schools

What a conference! This was one of our largest ever. We have heard many positive comments about the conference and are already looking towards next year's conference. This year's event was attended by 200 people. If you are new to CEDPA, you may think 200 attendees is a low number, but when you think of it in terms of who these 200 people are, you may take another view. CEDPA traditionally attracts DP/MIS/ITS Managers, Network Engineers, Technology Coordinators, and Computer Specialists from K12 institutions across the state. Our newsletter reaches over 700 K-12 Technologists in California. It is further distributed throughout Educational offices to several hundred more technologists. The association brings each of its members a very unique opportunity to discuss technology issues with their colleagues, and to network with their peers. Doing so brings benefits to all our members and our organizations.

Our annual conference provides a way for us to meet face to face and exchange ideas and ask questions. Our periodic special interest meetings allow us to meet and discuss specific topics that are of interest to us throughout the year. The bottom line is that if you are in the business of K-12 Technology, CEDPA is the organization for you. It brings you unique and unmatched opportunities to network with your peers throughout the state and to find answers to problems you have been working on or are about to work on.

I have been a member of CEDPA for quite a few years now. My major emphasis this year as President will be to highlight the strengths of our organization. I believe we are an organization that has its finger on the pulse of technology in the K-12 arena in California. I believe we are uniquely positioned to assist K-12 Education to further the use and understanding of technology in the classroom. I believe CEDPA members have the knowledge, skill, know-how and experience to make a positive impact in K-12's use of technology.

As stated, CEDPA's members are "techies" for the most part. We like what we do, and we do it very well. In the coming year, it is my goal to utilize the skills, and knowledge of our membership to assist K-12 Education in moving forward with technology. Specifically, this year, CEDPA will be putting together a *minimum thresholds* list for computers. This list will contain criteria that will assist schools and districts in establishing minimum stan-

dards 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 K-12 education.

We feel having a *Minimum Threshold of Computer Equipment* list will be beneficial to all of us similar to the *Minimum Threshold of Services* report submitted by the California County Superintendents Education Services Association Telecommunications/Technology Task Force. That document found at <http://marin.marin.k12.ca.us/~ccsesa/> is to assist K-12 Education in targeting the minimum level of telecommunications infrastructure and technical services that each region should provide. It is part of the statewide plan to get all schools connected to the Internet.

I am excited about CEDPA. We have such a tremendous amount of expertise and knowledge in our organization. I want to tap that knowledge in a statewide organized manner to assist all of K-12 Education in California to further their technology plans. I feel we can do this and am determined to move forward. Districts throughout California are finding they have additional funds for technology. Many of these districts are smaller districts and not certain of what they should purchase or who they should listen to. It is my goal to have CEDPA be a technical beacon to which they can look for advice and guidance on K-12 Technical Issues.

Our members are the people who design, plan, implement, support, and manage every network in K-12 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. Our association is as the industry is, in a state of change.

(See "President" on Page 13)

Teacher Course Recommendations Scanned Into Scheduling

Process: Streamlining of manual system results in a decrease of schedule changes.

Erick Garske
Capistrano Unified School District

For several years now Capistrano Unified has scanned period attendance at the high schools. This has far and away saved countless hours of manually recording students period attendance on index cards. Gone are the cards. Gone are the manual reports. Gone is the drudgery of counting tick marks in small boxes on index cards. What remains: unused index cards, file cabinets, and perhaps more importantly attendance eyesight. Though the transition required dual entry, the effort was well worth the minimal trials. At this point, no one in attendance would even think of returning those days.

A system for scanning teacher course recommendations and placing these recommendations into the students' scheduling files was piloted last year at Dana Hills High School. Moreover, when students attended registration for next year the courses which the teachers had recommended already appeared in the student's schedule. The end result was a significant decrease in schedule changes. This, of course, occurred since students were more accurately placed into the courses which best suited their academic potential.

This system was conceived by district administration, designed and written in house using both the existing student systems software and scan sheets and new programs written by the department.

This is a new year. Again we are piloting the same program at Dana Hills anticipating the same successful results. Should the program continue to succeed, the same techniques may be used at other high schools in the future.

Eric Garske is an Information Systems Support Specialist for the MIS department at Capistrano Unified School District. His e-mail address is egarske@capousd.k12.ca.us.

Conference Door Prizes Won by Many

Drawings: Lots of goodies—from software and T-shirts to a DSS satellite dish—complement Thursday's Vendor Show.

Darryl LaGace, Lemon Grove School District

Thursday's drawing filled the vendor showroom with anticipation. Over 100 door prizes were to be given away from vendors such as Novell, Microsoft, Sehi and CSG to name a few. The prizes ranged from T-shirts to a DSS satellite dish.

Novell provided a variety of clothing and "logo" accessories; many of those in the audience were just waiting for the next jacket, T-shirt, sports bag or polo shirt to be given away. Six people were the lucky recipients of the latest release of Microsoft Office, a desktop application suite. Other prizes included an outing to the Palm Springs Aerial Tramway, books on the Internet and Windows NT, Sports bottles, an H-P calculator, and lots of other "fun stuff."

Door Prize winners included Terry Pritchard of Bakersfield City School District (two nights' lodging at the Palm Springs Marquis Crowne Plaza Resort & Suites in Palm Springs), Oswaldo Galarza of ABC Unified School District (a \$100.00 phone card from ECS), Jose Aguilar of Madera County Office of Education (an HP Deskjet printer from Sehi), and Candy Smet of Atascadero Unified School District (a DSS satellite dish from CSG Wireless).

The drawing was a fun-filled event that brought a nice conclusion to an informative vendor show. Whether or not your name was drawn, if you attended the conference, you most likely walked away with the best prize of all...a chance to share information and hear what others in your field are doing in "Connecting Education".

CEDPA Wants Your Input

Do you like the "glossy" look?

The DataBus is now being published on glossy paper. Do you like the "new" look? E-mail any of the board members and let them know your opinion.

InterGate v2.5 Offers A Manageable Internet Solution

System: New release offers substantial differences from previous versions.

Dan Shahbazi, Internet Products, Inc.

Internet Products, Inc., an exhibitor at the recent CEDPA Conference, has released its latest InterGate v2.5. The new release is substantially different from version 1.2. with several features specifically developed to meet the unique needs of education.

GRAPHIC USER INTERFACE (GUI)

The new Web-based interface enables an administrator to manage the InterGate through Netscape Navigator with tools that provide a point-and-click environment. The goal, according to company CEO Farley Stewart, was to develop Internet server administration and management that did not rely on a text-based interface. "Users no longer need to know UNIX based commands," said Stewart. "Version 2.5 is much more intuitive, and it has the performance, compatibility and robustness of a UNIX solution without the headaches associated with command lines." Since the InterGate uses a Web-based interface, its management is not platform specific and can be remotely administered with Macs, Windows 3x, Windows 95, Windows NT or UNIX Workstations.

UNIFIED USER MANAGEMENT

Unlike InterGate v1.2 and other similar Internet servers, InterGate v2.5, according to Stewart, successfully responds to an administrator's challenge of managing a large number of user accounts that require frequent adjustments. "Their situation is further complicated because different types of Internet services like E-mail, Dial-up and Web maintenance typically require a separate interface for user maintenance," Stewart said. "The end result requires administrators to enter the same user's information for each different Internet service." To overcome these redundancies the InterGate provides template based account maintenance that controls each type of Internet service at the user level. "For a given user account administrators can enable or disable each Internet service for the user from the same window." InterGate's ability to manage user accounts is further enhanced with its group management function. Stewart said the template allows administrators to manage users as one group. "This

makes it easy to change user group services, disable access or even delete the entire group." According to Stewart, another area deemed critical for education is the ability to monitor Web access. InterGate v2.5 enables an administrator to require users to enter a user name and password to access the Web. The InterGate will then create retrievable logs that provide a transcript of all Web activities by workstation and user name. "Educators want to prevent users from accessing certain Internet sites," he said. "InterGate gives schools a way to enforce acceptable use policies and monitor Web activity."

MULTIPLE DOMAINS AND SUBDOMAINS

Internet Products gathered feedback about managing DNS from educational technologists and administrators and found several areas that needed improvement, according to Stewart. "County offices, districts and schools want their own domain on the Internet, but the process tends to be cumbersome," he said. InterGate v2.5 can establish separate identities for each hierarchy of an organization allowing an unlimited number of domains and subdomains. "Instead of being identified by an ISP domain name," said Stewart, "specific domain identifications can be easily established that are unique to the organization."

A NEW WAY TO UPDATE WEB PAGES

Many information managers and educators are investigating alternative methods to update web pages. The common method is to upload files to a particular directory on the Web server using FTP. According to Internet Products' Director of Engineering Bob Crowe, this is a viable method but it is awkward, tedious and error prone. InterGate v2.5 will directly map Web pages to a network drive using either Ethertalk or Microsoft Networking Protocol. "This greatly eases Web management because the process becomes a simple 'save as' operation from your HTML editor," Crowe said. According to Stewart, the key to updating web pages rests in an organization's ability to offer Web page areas for each of their schools.

(See "Intergate" on Page 6)

Intergate

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“Version 2.5 makes it possible for school districts to create individual Web page areas that can be independently managed by the schools themselves.” The InterGate will create appropriate directories, assign relevant permissions and permit a specific user or group to access a protected area.

WEB SITE CACHE

InterGate v2.5 has an integrated Web Site Cache that can save previously accessed web information. “This eliminates the need to contact a particular site multiple times,” Stewart said. The true benefit, according to Crowe, is decreased access time. “If you transfer less data over your Internet connection you reduce the access time and bandwidth requirements.” The InterGate’s Web Site Cache has a self-learning process that automatically checks cache integrity and removes old documents. According to Stewart, this ensures that cache is consistently refreshed. A Web Site Cache will allow a lesson planner to retrieve Internet data in advance and save the information on the InterGate. Students can then access the information from the InterGate without having to download it from the original site again.

Internet Products will setup a demo account to provide hands-on experience with the InterGate. For more

information about demo accounts e-mail a request to info@ipinc.com. Further information about the InterGate and Internet Products can be reached at <http://www.ipinc.com> or call 888-INTERGATE.

Dan Shahbazi is with Internet Products, Inc., and may be reached by e-mail at dan@ipinc.com.

www.microsoft.com Trivia

Have you pointed your web browser to Microsoft’s web site at www.microsoft.com and noticed how quickly their site responds to your commands? Ever wonder what kind of hardware is behind that web site?

According to their WWW Server FAQ (Frequently Asked Questions), here is what supports their site.

Ten Compaq Proliant 2000R servers running the Windows NT Server™ and Internet Information Server software power the Microsoft site. Each server has four 166-Mhz Pentium™ processors, 512 megabytes of RAM and five, 2-gigabyte hard disks. Their Internet connection is nine DS3 circuits.

The FAQ additionally states that the site averages about **35 million** hits per day.



Paul Shultz and others shown with CEDPA President Greg Lindner (r.) at golf tournament held after CEDPA’s Palm Springs conference.

Reflections of a CEDPA Treasurer

Responsibilities: Being treasurer isn't as "cut and dried" as one might think. Here's a look "behind the scenes".

Mike Caskey, Stanislaus County Office of Education

"Welcome on board as CEDPA Treasurer. We can't pay the bill." Now you have to admit that this is an interesting start to one's tenure as treasurer of an organization. On the other hand, we all like challenges or we wouldn't be in this business, right?

So what, exactly, does a CEDPA Treasurer do? I can certainly tell you what a CEDPA Treasurer can't do: You can't "wing it". At least not for long. The bank takes a dim view of that sort of thing. But, I figured that it couldn't be too difficult. Write a few checks and make a few deposits. Simple. Well, not exactly. There are a few additional duties associated with the position:

- Write Checks - Not only does the hotel want to be paid, but your hard working board needs to be reimbursed for their expenses. And, I don't know about "carpal-tunnel" syndrome, but the treasurer had best be prepared for a case of writer's cramp at Board meetings.
- Make deposits - For some reason, the checkbook doesn't work if you don't replenish the account
- Prepare and mail invoices for conference fees and SIG meetings (approximately 100 for '96)
- Prepare and mail statements
- Prepare and give a Treasurers' report at each CEDPA Board meeting
- Develop a Conference budget, track expenses, and prepare a follow-up report for the Board
- Produce annual tax returns for the State and Federal Government, including a statement of profits. (I discovered that there is no box on those forms titled "You've got to be kidding.")
- Produce an annual report to the California Secretary of State on the purpose of CEDPA and a list of the officers of the organization
- Make financial arrangements with Conference and SIG Meeting hotel staff
- Balance the CEDPA checkbook (Yes, unlike at home, this is a requirement.)
- Standard bookkeeping and accounting func-

tions (Debits are on the left.)

- Be extremely thankful for an exceptional Board with which to work, especially the CEDPA Secretary (Thanks Jane, for all your help!!)
- And finally, the most important function - Frown a lot at the CEDPA Board meetings.

So, what do I think.... Really? Serving as CEDPA Treasurer has been **Exciting, Frustrating, Fun, Terrifying, and Totally Worthwhile**. How could one not truly enjoy working with an Outstanding Organization with an equally Outstanding Board of Directors? This experience has been one of the best and most satisfying of my career. And, I've been in the field of Information Systems since programming consisted of wiring boards. (Many of you probably haven't heard of "wiring boards".)

Thanks to all of you for giving me the opportunity to serve as Treasurer. And Judy, Welcome on board as CEDPA Treasurer. We can pay the bill!!

ISDN

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cost of wireless is paid off in a very short time when compared to the cost of telco equipment, installation and monthly service charges.

Breeze Com radio units are extremely small and are configured with an included bridge. Segmentation of networks is a problem with this setup, but a small price to pay to avoid the cost of routers. We will be installing dual network cards in our servers to perform the routing services. One of the cards will be a fast ethernet card to plug into an ethernet switch; the other a 10 mb card for the bridge connection.

Our goal is and has always been to provide affordable connectivity to schools, primarily for Internet access. Thus far, our new wireless solution seems to be just what we were looking for.

Cisco System Announces Second Annual Nationwide Program to Provide Equipment to Enable Internet Access for K-12 Students

Virtual Schoolhouse Grant Program Continues World Wide Web and Internet Integration in the Classroom

DALLAS, Texas - October 23, 1996 - To help accelerate online access to educational resources in classrooms, Cisco Systems, Inc. today announced the second annual Virtual Schoolhouse Grant Program, which will help schools nationwide connect to the Internet. The grant program awards \$500,000 worth of products, service and training to 50 selected K-12 schools that develop a plan and demonstrate the ability to support and implement an internetworking site.

Grants are to be used for curriculum-based applications such as Internet access and in-classroom learning. Selected schools will receive equipment and services valued at approximately \$10,000, depending on their individual requirements. Grant recipients for 1997 will be announced on June 30, 1997 at the National Education Computing Conference (NECC) in Seattle, Washington.

"We've helped our students and staff become part of the global network and moved our isolated school from the 'end of road' to the heart of the information city," said John Bushell, media specialist and librarian at Kenai Peninsula's Homer Junior High School in Homer, Alaska. "Through our award in Cisco's 1996 Virtual Schoolhouse program, our 250+ students in more than 20 classrooms are beginning to realize the educational possibilities of gaining computer interactivity with their peers around the country. We will continue to use networking to create our scholastic web site, allow students to work on projects at home and review online work."

Depending on their specific needs, grant recipients will receive an access router, software, service and training. To meet the needs of first-time or beginning networking personnel, Cisco has customized its networking products for the grant program to increase ease-of-use and manageability.

Relevant products include:

- Internetworking devices — Routers from the Cisco 1000 or 2500 series; or a Cisco Catalyst 2800 series switch.
- Software — Cisco Internetwork Operating System (Cisco IOS™) software technologies, a suite of sophisti-

cated networking software that ensures robust, reliable networks by supporting standard protocols and optimizing services and internetwork access.

- Service and training — Cisco's Smartnet™ package includes maintenance support for one year and training on internetworking device configuration and installation if needed.

Combining these devices with Internet connections will provide schools with access to vast amounts of information in a time-efficient and interactive manner, and the ability to communicate within school districts and beyond to students in other cities and even other countries.

"Schools are using information networks today to combine the best of curriculum with online resources worldwide," said Keith Fox, vice president of corporate marketing for Cisco Systems. "This program is another way of helping students gain access to the educational tools they will need to be successful tomorrow. Combined with our ongoing support for NetDay, the Virtual Schoolhouse Grant program will help expedite the implementation and support of networks in educational institutions."

Grant Applications and Guidelines

Interested schools can receive an application through several channels: by accessing the web site (<http://www.cisco.com/edu>); calling Cisco's education hotline at (408) 526-4226; or sending an email to edugrant@cisco.com. Applications must be received by March 1, 1997. For additional guidance on how to articulate a technology plan for a school's network, Cisco and the University of North Carolina at Chapel Hill have established a World Wide Web site called the Cisco Educational Archive and Resources Catalog home page (CEARCH), which offers information and guidelines for the Grant Program and Cisco's education program.

The Virtual Schoolhouse Grant Program complements Cisco's corporate-wide initiative to provide the benefits of Internet access and international communication in today's classrooms. Cisco sponsors several educa-

(See "Cisco" on Page 9)

New CEDPA Officers Take the Helm

Ken Jones, Lodi Unified School District

At the annual CEDPA business meeting (held Friday of our annual conference), the slate of officers as proposed by the CEDPA board was unanimously elected. In addition, natural movement of the board caused several officers to move around. Here is your new line-up.

Greg Lindner is now the President, with Russ Brawn coming in as the President-Elect. Jane Kauble remains as the organization's extremely capable secretary. Addison Ching will remain at the helm of *The Databus*. Judy Acosta has taken the roll of Treasurer for the first time, with Mike Caskey appointed to fill the remaining term of director which was vacated by Russ. Darryl LaGace and Terrell Tucker were elected as full directors for a two-year term. Yours truly now assumes the much sought after role of Past President.

Eric Boutwell will continue as SIG chairperson, and a second SIG chairperson will be appointed by Greg if additional SIG support is required. Warren Williams continues as director for another year.

This is your team for 1997. I know that under their leadership the organization will continue to grow and expand its influence and value to you. If you have concerns about CEDPA or would like to voice your opinion, we are very happy to hear from you. Just e-mail us at the addresses listed in this publication or on our web site at www.cedpa-k12.org.

Cisco

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tional projects such as NetDay and the International CyberFair for Schools, a demonstration of educational and community-related information published by students and teachers on the World Wide Web. Cisco Systems also helps fund the GlobalSchoolhouse Project, an internationally recognized program for demonstrating the use of the Internet in K-12 classrooms across the U.S. and overseas. Cisco supports and participates in numerous educational networking and Internet organizations including CAUSE, the Consortium for School Networking (COSN), EDUCOM, the International Society for Technology in Education (ISTE), the Internet Engineering Task Force (IETF) and the Internet Society.

Technology Funds Update

Greg Lindner, Yolo County Supt. of Schools

This is an update on Technology Funds that may be available to your District or County.

On October 23, 1996, the State Allocation Board adopted the policy for apportioning \$29,400,000 for technology grants and \$350,000 for administrative costs from the proceeds of AB 1302. You may have heard these referred to as PUC Funds. In summary, this provides

- \$21,500 per qualifying applicant school district and applicant county office of education that operates community schools.

- The technology implementation grant will be automatically accompanied by a staff development grant of

(See "Funds" on Page 14)

1997 Vendor Show

Terrell Tucker

Panama-Buena Vista Union School District

After a highly successful vendor show at the 1996 CEDPA conference in Palm Springs, the CEDPA board is already busy planning for the 1997 conference in Sacramento. The Radisson offers space for a few more vendors. Several vendors were not able to showcase their products in Palm Springs due to an early sell-out of booths. We strongly encourage vendors wishing to attend the 1997 conference to get their booth reservations in early to avoid the same problem. As always, booth space is allocated to vendors when a reservation form is submitted with payment. This can be done at any time and I will gladly accept your checks!

The 1996 conference was also a hit with attendees due to a large number of donations for door prizes. We expect this trend to continue and urge vendors to submit prizes early and often. Name recognition is a valuable commodity and can be easily accomplished with "advertisement" at the conference.

So, look forward to a large vendor turnout in Sacramento, with many products on display. What better way to learn about solutions to your problems than to demo that product yourself. We are gearing up for a vendor show even more successful and profitable for attendees than ever before. See you at the Radisson in 1997!

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Microsoft's Communications Tools for Schools CD-ROM is a collection of communications and Internet tools designed specifically for K-12 education. Communications Tools for Schools works with Windows NT Server 4.0 to provide you with the most cost effective, comprehensive communications package and, best of all, it's easy to administer. Free* with the purchase of Windows NT Server 4.0, the CD-ROM comes complete with Installation wizards and specially designed user and groups wizards as well. Also included in this comprehensive package is email, Internet publishing and Web Server authoring and management components. Communications Tools for Schools also offers video conferencing capabilities for use over the Internet or within your network.

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(*must include a proof of purchase of Windows NT Server 4.0 and a shipping and handling payment).

The Fourth R is Research

It's time to recognize information skills as crucial for our students

Rich Thome, Cardiff School District

To those of us principals and superintendents involved with the new technologies in education, it's clearer than ever that they are challenging us to change our approach in schools. As one of the first district technology coordinators in the nation—in the Capistrano Unified School District in the early 1980s—I was lucky enough to glimpse what the future would be in our classrooms—a future that is now upon us.

A change of immense proportions.

Back then, technology was seen as an enriching addition to our rigorous curriculum; it did not seriously challenge us to rethink and retool our delivery system. We never questioned our primary purpose—to teach the same three R's that have been our focus since the days of the one-room schoolhouse.

However, today's marketplace demands that we add a fourth R if we are to prepare our students for the world of work and study—the R for research.

It's all because of the internet. Our students have the capacity to become experts on any topic, simply because they now hold the key to infinite stores of knowledge and all the resources one can imagine. Our dreams of “classrooms without walls” and online access to the libraries, museums, and think tanks of the world are now attainable.

Today we face the imperative of giving students the skills to effectively navigate their way through the vast resources on the Internet (see box, next column). Those ten basic skills and abilities are essential to this fourth R.

All of this involves a very different way of thinking about teaching. Our classrooms need to become research laboratories. Most traditional lessons would then be beginning points, not ends in themselves.

As students pursue discoveries using online resources, we must teach them to think critically. They must learn how to recognize bias, propaganda, and commercially driven information, to think both concretely and abstractly, to reason and to question.

A student without research skills like those will soon be lost. Today, a *Web-Crawler* search on the Internet for information on dolphins, for example, produces more than 1,400 selections—and the Web is growing astronomically. Infusing the fourth R into the curriculum is the

10 Essential Research Skills

To effectively use the Internet, students must have the ability to

1. Determine whether the Internet is the best tool for the research or whether the information may be found elsewhere (such as in books).
2. Define the critical attribute or essence of the search topic.
3. Effectively phrase requests to most effectively target the research topic.
4. Limit the search so that is centered on a more focused selection of materials.
5. Effectively use a variety of search engines.
6. Recognize resources that may be too large for searching, may load too slowly, or are error-prone.
7. Scan through the resources quickly in order to focus on the most valuable information available.
8. Group promising resources for further evaluation.
9. Think critically in order to take intuitive leaps to other resources.
10. Effectively organize and record good findings.

educational challenge of the 1990s. Students will face the same demands—to find essential information almost instantaneously—in their first job.

Taking the lead.

To meet the challenge of the fourth R, superintendents and principals must initiate a monumental shift in perception by educating and persuading school boards, fellow administrators, and teachers. We must convince all that making meaning out of the vast amount of information available to our students is a challenge that must be met and that research skills are basic to a sound education in the 21st century.

Let's start with our staffs. We need to form “think tanks” of teachers and others to discuss how to integrate online research skills into classroom activities and then

(See “Research” on Page 14)

PowerPoint + ActiveX™ + IE = Opportunities

Training: New technologies provide ability to distribute presentations over the Internet.

Addison Ching, California State University Chancellor's Office

Microsoft has made some recent enhancements to its PowerPoint presentation application that promises to change the traditional methods of training and help desk support that we data processors strive to provide our customer base with. This is another fine example of the "Paradigm Shift" that technology has introduced.

PowerPoint is a presentation application that can be used to create and display electronic presentations (slide shows). For those of you who attended breakout sessions at the recent CEDPA conference, many of the presentations, including those made by Darryl LaGace and me used PowerPoint presentations.

Microsoft recently released a new product they call the "PowerPoint Animation Player for ActiveX." This product includes two components: The Animation Player, a free Internet browser extension to view PowerPoint animations and presentations; and the Animation Publisher, a free add-in for PowerPoint 95, that can be used to animate your Web pages. The Animation Player works with Microsoft's Internet Explorer 3.0 or Netscape Navigator 2.0 (or later versions.) Windows 95 or Windows NT 3.51 or later are also required.

How does this tie in with training and help desk functions? Hold on...the best is yet to come.

First, convert your existing training and help desk materials into PowerPoint presentations, and reorganize them to be self-help tutorials. Trainingwise, this actually works a lot nicer than traditional methods of preparing training materials since you can use "cut and paste" methods to include examples and graphics right into your presentations. A real benefit for doing this is that all your training and help desk materials can now be maintained electronically, rather than being retyped and redistributed to everyone that has a printed copy of the documentation.

Second, use the PowerPoint Animation Publisher extension to PowerPoint to convert the presentation to its web-page equivalent. The publisher actually creates two outputs: the actual presentation for use on the web and an associated HTML page that is used to access the web presentation. Place these pages on your enterprise or intranet web server.

Third, install the Animation Player on all of your clients' computers. If you're using Internet Explorer, the required extension will be "push-loaded" to your browser

automatically. When the next call for assistance comes in, simply refer the caller to the URL of the web page that contains the presentation that will assist them. Using this methodology, clients can get the help they need any time they want it and at their own pace by "playing" back the presentation. Using the animation player, all the traditional animations, sound effects and controls that were included as a part of the original PowerPoint presentation are available OVER THE WEB! Your presentations can now be shared with virtually anyone who has access to the Internet (or your agency's intranet.)

Why is this a good idea? It can help make your customer assistance more efficient. Less time will be required on telephone assistance calls. Travel to remote customer sites won't be as necessary and frequent. Training materials can always be reviewed whenever necessary—and at the convenience and privacy of the client.

To see how this can work for you, get a hold of the animation player from Microsoft's web site, then point your browser to www.cyberventure.com/demo/classroom_wiring.htm. This is the actual PowerPoint presentation that we used in the "Classroom Wiring from A to Z" preconference session that Darryl LaGace and I gave at the recent CEDPA conference. For those of you that attended our session and want a copy of the slides, this is an excellent way to get them, too! Be prepared for a lengthy download—the presentation, with graphics, is over 800k in size! For a shorter demo, try [client_access.htm](#).

A Change in Scenery

Some of you may have noticed that I have a new address. I'm now with the California State University Chancellor's Office as a Technical Project Manager for Corporate Information Systems. My project team will deal with Information Dissemination and Access—distributing information stored in the our data warehouse to various office departments by using Internet technologies. The team is also responsible for coordinating the web activities of the CSU Chancellor's Office *and* are the Webmasters of www.calstate.edu. Although I'm now connected with higher education, I'll be continuing with CEDPA as a board member and *The DataBus* editor and try to bring you some insights into CSUnet, the Internet provider for many of you. You can reach me by e-mail at addison@calstate.edu.

Conference Program— A Success!!!

Judy Acosta
Ventura County Superintendent of Schools

Thanks to all of you who participated in the 1996 CEDPA Conference in Palm Springs. The breakout sessions were great and you all did a wonderful job. The keynote speakers had a lot of good things to say and were well received by attendees.

We had two problems during Thursday's luncheon presentation. The projection unit could not be setup correctly because of the limitations of the room. Those sitting in the back of the room could not see the screen very well, (if at all), and the sound system was not sufficient to enable those in the back of the room to hear. Alex Kaplan, the luncheon speaker, was very patient throughout this trying experience, and we once again offer our apologies for this snafu.

Dr. Rudy Castruita, Superintendent of San Diego County Office of Education, did a fantastic job of opening our conference, and we received lots of favorable comments from conference participants regarding his presentation. The closing of the conference was successful as well, with Jody Warne-Ellison letting us know what the future holds in the way of technology and how we can adapt to it.

There were so many **great** breakout sessions that it would be impossible to determine which one was the most "popular." All sessions brought something of value to someone. Once again, my sincere thanks to all of you who participated and helped make this conference the most successful ever. Let's try for a repeat performance in Sacramento in 1997. I hope you will all help the 1997 Speaker Chair, Warren Williams, as much as you helped me. I would suggest that you reserve a spot for a presentation early in 1997. I had many inquiries for breakout sessions long after the program was full.

See you in Sacramento in 1997!

President

(Continued from Page 3)

Stay tuned to our web page (www.cedpa-k12.org) and the *Databus*, for more information on this in the future. Email and let me know what you think or how CEDPA can make a more positive impact on you or your organization.

December, 1996-January, 1997

VACANCY ANNOUNCEMENT

DIRECTOR OF TECHNOLOGY

Napa Valley Unified School District is accepting applications for Director of Technology. The District is seeking candidates with outstanding technological and management skills.

A valid California Teaching Credential and a valid credential authorizing administrative services are preferred, but not required.

DUTIES AND RESPONSIBILITIES

The Director of Technology develops, supervises, and manages instructional information systems including infrastructure, resource allocations, standardization, and updating a variety of technologies. The Director of Technology has overall responsibility for the implementation of any district long-range and strategic planning in technology, providing leadership and direction for the continuous updating of the District technology vision and plan; will work with appropriate departments and community agencies to insure that infrastructure development and design meet the district needs; create a district-wide technology configuration which allows the management of information including both administrative and instructional uses. The Director of Technology will serve as project manager for the New Technology High School.

SALARY INFORMATION

Placement on Current Management Salary Schedule.

Salary Range: \$55,401 - \$69,693

Workyear: 211 days

Excellent Benefits

TO APPLY

An application packet should include:

District Application

Resume

Letters of Recommendation

(Photocopies and clear faxes of documents are acceptable)

Applications should be submitted to:

Human Resources

Napa Valley Unified School District

2425 Jefferson Street

Napa, California 94558

Fax (707) 253-3953

Closing Date: Monday, January 6, 1997, 4:30 p.m.

Funds

(Continued from Page 9)

\$4,000 for staff training for the same schoolsite receiving a technology implementation grant.

The details of these funds can be found at <http://www.dgs.ca.gov/opsc/mail.htm>. The important item to note is the deadline for these funds is February 28, 1997. Also, all districts and county offices of education will be required to match the technology grant amount.

Lastly, the SAB granted CCSESA's (California County Superintendents Educational Services Association) \$10 million to complete the CCSESA's K-12 Telecommunications backbone. Phase I of the plan provides that all 58 County Offices of Education will meet a minimum threshold of connectivity. Phase II of the plan is envisioned that all school districts will meet a minimum threshold of connectivity to their County Office (either physically or via the Internet). Phase III of the plan envisions all schools will meet a minimum threshold of connectivity to their District. It is anticipated that funding will cover Phase I and part of Phase II. Kern COE is the LEA on the Telecommunications Plan. Kern will be providing more details as they become available.

Happy Holidays from
CEDPA
P.O. Box 6552
Huntington Beach, CA 92615-6552

Research

(Continued from Page 11)

how to make a shift in practice to become motivators and facilitators.

We must present our case to our school boards and secure the support to focus on this new discipline. We need to convince the community that research skills must be included in performance standards for students. The ability to obtain, organize, and evaluate information is a skill students will use their entire lifetime—it really is the fourth R.

Richard Thome is District Superintendent for the Cardiff School District and chairperson of the San Diego County Office of Education's Superintendent's Technology Advisory Committee (STAC.) He can be reached by e-mail at rthome@sdcoe.k12.ca.us

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