

SCANFAX

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— Chicago Section —

Wireless Productivity

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DeVry DuPage, Room TBA, 1221 N. Swift Rd., Addison, IL

No Registration Needed

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Chairman
Connie Kelly
Phone: 847-297-6610
Fax: 847-298-1264
E-mail: constance.kelly@comcast.net

Editor
Gerry Ryan
Phone: 708-445-7537
Fax: 708-445-7538
E-mail: gerryr_idcs@ameritech.net

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Publisher
Barbara Slack

Advertising Sales
Beth Vander Grinten
Phone: 608-222-7630
E-mail: bethv@slackattack.com

Art Director
Kristin Mitchell

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Meeting notices should be sent to graphics@slackattack.com.

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Big changes coming thanks to wireless technology

There's a new productivity paradox in business: Employees have a desk and workstation where all their tools are, yet they are spending less and less time there.

Why can't an employee get access to desktop files from a laptop in a conference room? Or from home? Or from a hotel room or airport lobby? And why can't other employees reach that employee anywhere in the world just by dialing his or her office phone number?

The short answer is, you can do all that with integrated wireless network solutions. This was demonstrated at a presentation on the University of Wisconsin-Madison campus recently by Bruce Alexander, a channel account manager for Cisco. While his Wi-Fi enabled laptop was running his presentation on a large screen, he received a call via his laptop from a colleague who had called Alexander's office number from a cell phone. While the caller could have been anywhere in the world, he turned out to be out in the hall of the conference center.

The other parlor trick Alexander demonstrated was using RF tracking technology to see who was still at work back in San Jose by calling up the employee badge tracking system and viewing an interior map of one of Cisco's buildings.

Radio waves, especially within the 802.11 bands, have become a way to connect people, network computers, link phones, and track things, all within intelligent, self-policing networks. That is why the mobile wireless segment is one of the fastest growing areas in the telecommunications sector. Enterprises and service providers of all sizes are building infrastructures to support mobility services and applications.

Alexander was speaking to an IT networking and business support group called Accelerate Madison, and his presentation can be viewed as a webcast at www.acceleratemadison.org. He said Cisco Systems is pushing the idea that wireless mobility can deliver significant benefits to enterprises and service providers in ways that are just beginning to be explored.

Cisco uses the term "enterprise mobility" to describe providing ubiquitous connectivity for the mobile user, independent of devices, applications, or access technologies. Within a mobile enterprise, users can stay connected and productive whether they are using the corporate network through a mobile LAN, using a

personal digital assistant (PDA), a mobile laptop computer, or a mobile telephone. In fact, new cell phone models are being released that can switch between both cellular networks and Wi-Fi.

In a Cisco executive briefing, the significance of mobility was highlighted with the following data points:

- The Telework Association and Council estimates that 50 to 70 percent of office space is unoccupied during normal business hours. Yet people are working longer days by doing more of their work outside the office. Providing mobile access can have a significant positive productivity effect.

continued on page 4...

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- The market research firm NOP World Technology found that workers can stay connected an additional 3.5 hours per day, resulting in a 27 percent increase in productivity.
- AT&T's internal studies of mobility indicate that mobile access gives workers an average 6.5 hours more per week of productive time.
- An IDC study found that Western European small to medium-sized businesses achieved a 22 percent increase in profitability as a result of adopting mobility access technologies such as mobile phones, laptops, and wireless LANs.

Cisco offers ways to combine wireless and IP technology to create anytime, anywhere connections to the Internet and enterprise networks. Users can maintain continuous connections even when they move between wireless cells within an enterprise, or completely out of wired environments. And the connection can be high-speed and secure.

Access point devices should be able to communicate with any of the current 802.11a/b/g connectivity standards. Alexander said that Cisco Aironet access points that use software that makes them autonomous and so they do not need a wireless LAN controller. In a future software release, selected Cisco Aironet autonomous access points will be upgradeable to operate as either autonomous

access points or lightweight access points. Security of wireless networks is a continuing concern, and Cisco addresses that through the ability to secure and control the RF environment and by controlling access to the WLAN via numerous authentication and encryption policies, including 802.11i, Wi-Fi Protected Access (WPA), WPA2, and mobile VPNs. The RF environment should also be scanned for rogue access points, unauthorized users, and potential intrusions.

Finally, Alexander said that a typical budget for a wireless network is 15 percent for the capital equipment and 85 percent for maintenance and operations. Ways to make the management of a WLAN easier can save a great deal of that 85 percent.

Ways to simplify operations include real-time RF scanning, monitoring, and control being integrated directly into the WLAN infrastructure. This delivers a self-configuring, self-optimizing, and self-healing wireless network. It makes adjustments for characteristics that may adversely affect network performance such as interference and coverage holes.

The access points should also be high-capacity and designed for either office locations or rugged environments, with support for a broad range of operating temperatures.

Finally, there should be a single point of control for all WLAN traffic, and the system should be scalable, able to support

deployment of several, hundreds, or thousands of central or remotely located access points

The benefits of a seamless Wi-Fi environment can be great for a wide variety of enterprises:

- Employees can accomplish more in every meeting, make faster decisions, and use every minute more effectively whether in the office or on the road.
- Hospitals can improve patient care.
- Government agencies can deliver faster access to information and enhance public safety.
- Manufacturers can share real-time data from the manufacturing floor and support "just-in-time" manufacturing and assembly.
- Retail environments can provide data mobility throughout the entire store and warehouse, allowing sales staff to serve customers more effectively.
- Corporations can better track assets, access critical business information, and enhance employee productivity through real time information exchange.

Alexander acknowledged that, as the group that sets the 802.11 standards, IEEE is at the center of this burgeoning wireless revolution that seems destined to change the way everything is done in the 21st century. ■



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Evening Meeting

IEEE Communication/Computer Society Chicago Chapters WiMAX – A Killer Technology or Another Hype

Monday, November 7, 2005

Dr. James Yu, DePaul University

About the Topic:

Broadband Wireless Access (BWA) has been in place for many years (such as MMDS and LMDS), and the latest one that receives a lot of attention is WiMAX (Worldwide Interoperability for Microwave Access). The proponents of WiMAX consider it a killer technology that will have a significant impact on WAN as WiFi on LAN. One study by In-Stat/MDR shows that the market for broadband wireless is forecast to reach \$1.2 billion by 2007, where WiMAX is expected to be a key player in this market.

This talk will start with a brief introduction of various competing broadband wireless access technologies, and then present the key concept of WiMAX as specified in IEEE 802.16a which is an extension of 802.16. As the other IEEE 802 specifications, 802.16 covers both the physical layer and the Medium Access Control (MAC) sublayer. The physical layer specifies adaptive modulation, error correction techniques, frequency spread spectrum, adaptive

antenna system, and advanced power control algorithm. The MAC sublayer is quite different from 802.3 or 802.11 as it provides a connection-oriented service and supports Quality of Service (QoS). It also includes a privacy sublayer, applying X.509 for digital certificate with strong protection against potential hacking.

About the Speaker:

Dr. James T. Yu is an assistant professor at DePaul University where he is teaching and researching in the areas of wireless technologies (WiFi, WiMAX, and 3G), Fault Tolerant Network, and Voice over IP. He was the director of Network Technology at ARBROS Communications (a facility-based CLEC), responsible for network architecture, design, and management. He had 15 years of experience at Bell Labs working on telecommunications switching development and information technology projects. He received the MS and Ph.D degrees in Computer Sciences from Purdue University.

Location:

IIT Rice Campus, Room 166

Directions:

The IIT Rice campus is on the northeast corner of the junction of East Loop Road at Butterfield Rd. The intersection is about 3 miles west of IL 355 and IL 53

Map: www.rice.iit.edu/directions.html

Time:

6:30 p.m. Social
(Free snack and beverages)
7:00 p.m. Presentation

Cost:

No charge for attending the seminar.

Reservations:

Reservations are not required, but registering your intent of attendance at ieechi@yahoo.com is very appreciated.

For more information:

Visit IEEE Chicago Section website at: <http://www.ewh.ieee.org/r4/chicago/>, or contact: Yigang Cai ycai@ieee.org or Jack Sherman j.sherman@ieee.org.

Evening Meeting

Chicago Chapter of the IEEE Power Engineering Society

Topic to be determined...

Wednesday, November 9, 2005

Due to a last minute scheduling change, our planned meeting for November 9 was postponed. We will meet on November 9, but the topic and speaker were not identified before Scanfax went to press. Please check the PES Chicago Chapter web site: peschicago.org for details on the November 9, 2005 meeting.

Location:

ComEd Commercial Center, 1919 Swift Drive, Oak Brook, IL (near the I-290 and I-294 interchange)

Time:

5:30 Social
6:00 Dinner
6:45 Presentation
8:00 Adjourn

Reservations:

Please call the IEEE Business Office by noon on Monday 7 November 2005 at (630) 493-4333 or (800) 898-IEEE to make your reservation. The cost of the optional box-lunch style dinner is \$15 for IEEE members, \$20 for non-members, payable at the event. Sorry, we are unable

to process credit cards. Checks payable to "IEEE-PES Chicago Chapter" and cash are accepted, and receipts will be provided.

Continuing Education:

IEEE technical meetings may be acceptable as continuing education where required for maintenance of professional engineering licensure. Refer to the individual state's requirements for details.

Information:

Please visit the Chicago Chapter IEEE PES web site: <http://peschicago.org>

Day Meeting

IEEE Chicago Section

Career Planning for a Changing World

Saturday, November 12, 2005 • 8:30am to 2:30 pm

Meeting Location:

Embassy Suites Hotel Chicago-O'Hare Rosemont
5500 North River Road, Rosemont, IL 60018-5230

Cost: members \$75, non-members \$95, & students \$40 - lunch included.

Program:

Preparing for the jobs of tomorrow 8:30 to 10:00 am

Keynote

The world economy is improving at the expense of the US economy. US companies are taking advantage of lower labor rates in India, China and Russia to subcontract routine engineering activities. How can we, as engineers protect our careers against off shoring?

This will provide you with:

- "What jobs have gone overseas and what types of jobs are not likely to return?"
- "What can you offer that the competition (overseas) cannot?"
- "What types of jobs are increasing?"
- "What types of jobs probably won't be eliminated?"
- "What is your best move going forward?"

Speaker - Michael Wynne

Michael Wynne is President of International Management Consulting Associates. For over 20 years he has helped companies build and grow profitable operations in the US and other countries around the world.

During his corporate career, Mike was president of a multimillion dollar Mobil Oil subsidiary with responsibility for several countries. Later, as Strategic Planning Manager with Mobil Chemical Company he developed global plans and strategies for a \$2 billion operation.

In addition to his consulting and coaching activities, Mike is frequently asked to address business audiences in the US and abroad. He has spoken to thousands of business people in 19 countries. He is also invited regularly as a guest lecturer at Northwestern University's Kellogg Graduate School of Management,

Break 10:00 TO 10:15 am

TRACK 1 - Enhancing Your Career

Career Planning 10:15 to 11: 45 am

Changes in the world economy have caused companies to change their hiring philosophies. Gone are the days of lifetime employment. Each individual must take control of his/her career. This seminar will provide you the information to ...

- Take responsible for your career (Don't wait for others to do it for you.)
- Develop goals for your own self-development
- Separate your job from your career
- Become a continuous learner
- Provide tips on how to become a good networker

Speaker - Kenneth Kuchar - Scherer, Schneider, and Paulick (SSP)

Lunch 11:45 to 12:15 pm

Marketing your ideas 12:15 to 1:30 pm

Communicating with non-technical people

To become a good leader, you must be able to get information across to many levels and various backgrounds of people. This presentation will help you understand the following:

- How to understand what my audience is looking for.
- How to clarify for myself what I want.
- How to deliver the message effectively.
- How to ensure the message has been understood.

Speakers - Linda Jansak and Judy Rosenberg - Chicago Chapter of STC

Effective Technical Presentations 1:30 to 2:30 pm

As an engineers career progresses, presentation skills are essential. You must be effective at selling ideas, helping others to see your point of view & seeking assistance. This presentation will help you understand:

- How to get your idea across in a clear and concise manner.
- How to use visual aids effectively.

Speaker - Hugh Dunbar - Toastmasters International

TRACK 2 - Changing Careers

From Corporate to Entrepreneur 10:15 to 11:45 am

Starting your own business sounds like a lot of fun. But what are the pitfalls you might encounter?

- What things do you need to think about before jumping in?
- How to prepare a business case?
- How to handle the, I'm either looking for work or working cycle.
- How do I manage risk?

Speakers - Bret Johnson and Jeff Coney - Northwestern University

Lunch 11:45 to 12:15 pm

Protecting Your Intellectual Property 12:15 to 1:30 pm

The better your idea, the more likely it will draw the attention of your competitors. How can you communicate ideas with customers, suppliers, financiers, etc without giving away the store? This presentation will guide you as to how to protect your intellectual property.

- How to speak about your idea.
- What is a confidentiality agreement?
- What about patents and copyrights?
- Can I publish a technical paper and still retain rights?

Speaker - Martin Faier, Faier & Faier P.C.

Time/Goal Management 1:30 to 2:30 pm

(Managing your start-up)

Time is a precious resource that cannot be replenished.

Things you should learn:

- What is time management assessment?
- What are time wasters?
- What are time savers?
- How to set practical goals?
- How to prioritize and focus on the high payoff activities

Speaker - TBA

Career Planning for a Changing World Registration

Meeting Location: Embassy Suites Hotel Chicago-O'Hare Rosemont • 5500 North River Road, Rosemont, IL 60018-5230

Date: Saturday, November 12, 2005 Time: 8:30 a.m. - 2:30 p.m.

Cost: IEEE members \$75, non-members \$95, students \$40

Fax or mail this form with payment to: IEEE, 4513 LINCOLN AVENUE, SUITE 213, LISLE, IL 60532-1290 USA; FAX: (630-241-0142)

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City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ Email: _____

Circle your preference: Track 1 or Track 2 (Space is limited so register early)

For more information call: 1-800-898-IEEE

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Apertio offers competitive compensation and benefits package

POSITIONS AVAILABLE

Solution Architects are responsible for interfacing with customers and partners to formulate appropriate technical and product responses, compare current and future Apertio products to competitive solutions and drive Apertio product road maps and plans based market information and customer/partner feedback.

Experience with GSM core network infrastructure (HL, HSS, Prepaid, MSCs, CAMEL SCPs, and Short Message Service Centers) in mobile networks and experienced with IP Multimedia Systems.

Software architecture experience in conceptualization, definition and development of telecommunications based products and services.

Ability to lead and influence others to achieve corporate objectives

BS in Engineering, computer science or appropriate related experience.

Integration/Support Engineers are responsible for preparing and testing strategies and test plans, run internal system test and external acceptance tests at customer sites and provide primary technical interface between Apertio and its customers for test and installation of software, and resolution of technical queries and faults.

Experience in testing and deploying core network infrastructure such as HLR's, SMSCs, Prepaid or Voicemail into mobile networks, with strong preference toward experience with GSM mobile environments.

Systematic, precise and well organized working style within a "hands-on" team environment.

Excellent written and verbal communication skills.

BS in Engineering , computer science or appropriate related experience

Project Managers are responsible for planning, coordinating and monitoring the implementation of software products and services to our customers according to project life-cycle deadlines.

Project management experience in leading core network software and system integration projects either working for a supplier or with mobile network operators

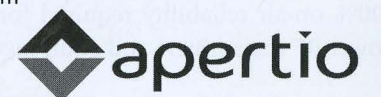
Manage multiple concurrent projects in changing technology environment

Excellent supervisory, planning, interpersonal and leadership skills.

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Please submit cover letter and resume to:

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Email: usa.staffing@apertio.com



Evening Meeting

IEEE Chicago/Rockford Consultants' Network A joint Affinity Group of the IEEE Chicago and Rock River Valley Sections

Open Discussion: Consulting Practice Issues and Preparation for AICN Workshop

Monday, November 14, 2005

About the Topic:

NOTE THE EARLIER DATE FOR THIS BI-MONTHLY MEETING.

The network Board of Directors will facilitate an open discussion for consultants and potential consultants on business aspects of starting and running a consulting business. We will use this meeting as an opportunity to refine the program for the December 3rd AICN Consulting Workshop. It will provide meeting attendees valuable preliminary information on these topics that will also maximize the information benefits they can receive by attending the Workshop. This meeting will be an excellent opportunity for you to identify topics of interest to you in the establishment and operation of a consulting practice that we can further elaborate

on in the Workshop. It will also provide an excellent opportunity to register in advance for the Workshop.

Meeting Location:

Palatine Public Library
700 North Court
Palatine, IL
847-358-1216

Dinner Location:

Bakers Square • 270 E. Northwest Highway
(at the corner of North Court St.), just south of the library

Time:

6:15 p.m. – Optional Group Dinner at Bakers Square (Order off the menu – reservations not required)
7:30 p.m. – Meeting – Open Discussion
9:15 p.m. – Adjourn

Continuing Education:

Attendance at this meeting will earn 1.0 PDH.

Information:

Information about the network can be obtained by e-mail to: consultnet@bmillerengineering.com or JAuerConsulting@worldnet.att.net, or visit our web site at <http://www.drblank.com/coaction.htm>

Meetings are usually held on the last Monday of odd-numbered months; however this meeting is scheduled earlier due to the Thanksgiving holiday weekend.

Evening Meeting

IEEE EMC Society Chicago Chapter

Surge and EMP in the Broadcast Environment

Tuesday, November 15, 2005

Warren Shulz, Chief Engineer, WLS

About the Topic:

Our speaker will discuss the many engineering challenges associated with the successful operation of WLS, one of the largest radio and TV broadcast stations in the country. The presentation will range from the surge protection of sophisticated equipment against lightning strikes, to the 100% on-air reliability required for high power RF transmitters and equipment.

In addition, our speaker will discuss the important public safety role that WLS has with our nation's emergency broadcast system in times of natural disasters or national emergency.

About the Speaker:

Warren Shulz, is the Chief Engineer for WLS, the Chicago affiliate of ABC. He is also the State Chairman for the Illinois State Emergency Communication Committee. Mr. Shulz was voted one of the Most Admired Engineers In Radio for 2003 and 2004.

Meeting Location:

DLS
1250 Peterson Drive • Wheeling, IL 60090

Time:

6:30 p.m. Social Hour
7:00 p.m. Meeting Start

Reservations:

Jack Black
Phone: 847-537-6400

For Additional Information:

IEEE EMC Society www.ewh.ieee.org/soc/emcs/chicago/

Evening Meeting

IEEE-IAS Chicago Chapter

Renewable Energy Sources

Wednesday, November 16, 2005

Bob Vogl, President
Illinois Renewable Energy Society

About the Topic:

In view of the rising price of oil and concern for air quality, there has been much interest in recent years in renewable energy as opposed to fossil fuel. There are many sources of renewable power, some of which only exist in specific regions. The focus of this presentation will be on solar and wind power, which are available locally.

About the Speakers:

Dr. Vogl earned a Doctorate from the University of Michigan and is a retired Professor at Northern Illinois University. Along with his wife Sonia, also a retired Professor, they live on a farm in Ogle County IL with 3.2 kw of solar and 1 kw of wind generating capacity. They consult

with park districts, private homeowners and commercial clients on renewable power. Each year they organize Energy fair at the Ogle County Fairgrounds in Oregon IL.

Location:

COSTA'S (GREEKTOWN) 340 S Halsted St. Costa's is located in Greektown on the corner of Van Buren and Halsted See www.iaschicago.com for detailed directions and a map.

Time:

5:30 Social
6:00 Dinner
7:00 Presentation

Reservations:

Please call the IEEE Business Office by November 9 at (312) 253-4333 or (800) 898-IEEE to make your reservation. You

can also make your reservation online at www.iaschicago.com.

Continuing Education:

For PE licenses requiring Continuing Education for renewal, attendance at an IEEE Technical Meeting is acceptable as 1 Professional Development Hour (PDH).

Cost:

Your cost includes the presentation and lunch with choice of main entrée: Roast Lamb, Chicken or Fish. (Vegetarian or special dietary meals available on request). Cost is \$25.00 IEEE member and \$30.00 guest. Valet parking included with your meal.

Information:

Visit IEEE Chicago Section IAS/IES website at www.iaschicago.com.

Evening Meeting

IEEE Electronics in Medicine and Biology

The Data Repository Debate

Monday, November 28, 2005

About the Topic:

The debate on electronic medical records has raged on for decades - almost since the introduction of computers into American hospitals. Both sides have put up solid arguments stalling the project.

Have the recent weather events pushed the debate to one side or the other?

This will be a frank discussion of where we are, where we should be, and what we learned after the hurricanes in the Gulf Region.

Location:

DeVry-DuPage Campus
1221 N Swift Road
Addison, Illinois

Time:

7:00 - 9:00 pm.

Reservations:

Contact: ckelly@ieee.org

Chicago Section Nominee Recognized for Outstanding Achievement in Engineering

Each year the Illinois Engineering Council (IEC), which consists of representatives from numerous and diverse engineering societies across the state of Illinois, recognizes outstanding contributions in engineering across all disciplines. To be considered, a project must be operational and show innovation in the application of engineering principles.

This year an entry from the Chicago Section was selected as one of projects honored as outstanding engineering achievements in Illinois for 2004.

The Illinois Department of Transportation (IDOT) District One Communications Center Upgrade and Redesign, developed and implemented by Martin Anderson and Stephen Peters, joined the environmentally friendly redesign of the parking areas at the Morton Arboretum in Lisle, IL; the new water treatment plant in Moline, IL; and a reactor byproduct separation and reclamation process at the Argonne National Laboratory in Argonne, IL; in being recognized for creativity in solution of complex problems.

The Illinois Department of Transportation District One Communications Center is the Command and Control Center for IDOT operations in the busy Northeastern Illinois corridor. Traffic volume in this area is regularly within the top ten congested traffic areas.

As traffic volume continually increases in the Metropolitan Chicago area and the Metro area expands outward, the ability to move vehicles efficiently in all types of weather and road conditions becomes critical.

The Communications Center has primary responsibility for insuring optimum traffic flow by:

- 1.) Monitoring traffic volume and instituting measures to optimize the flow in conjunction with Traffic System Center in Oak Park, and Emergency Traffic Patrol at 35th and Normal in Chicago.
- 2.) Managing incident response which can potentially impact traffic flow and monitor and direct the Emergency Traffic Patrol personnel (Minutemen).
- 3.) Provide accurate information to the public via IDOT channels like Highway Advisory Radio (HAR) and roadway signage and via broadcast media.
- 4.) Plan for traffic routing based on conditions
- 5.) Provide support to law enforcement and Public Service Agencies via video sharing and responding to potential road closures, detours, etc.
- 6.) Maintain and operate lighting and signage.

- 7.) Operate some 50 pumping stations along the expressway system to prevent flooding.

The Communication Center has replaced its aging equipment with state-of-the-art consoles, large screen plasma monitors, and redundant fiber-microwave paths to insure reliable traffic management in one of the top ten congested areas of the country.

The Christie Video Wall displays incident information including video, maps, and text data for use by dispatchers. This information is also made available to the media and the traveling public as appropriate.

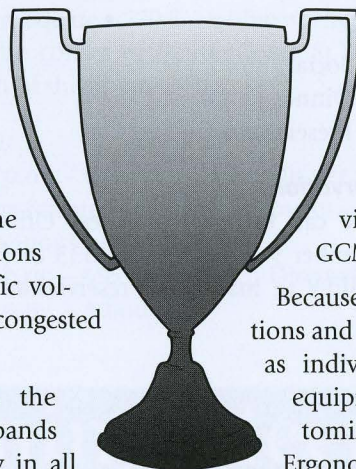
Additional Plasma displays allow for viewing the video output of cameras along the expressway system in the six-county metropolitan Chicago area. Video over voice grade lines is employed in the event that sensors are displaced during road construction. These cameras can be deployed as long as there is a 110v power source, voice grade lines, and a mounting pole. Video from the expressway system can be viewed as streaming video or snapshot video (mpeg) on the GCMtravel.com website.

Because it is crucial that the operators remain at their stations and remain alert, the operator consoles were designed as individual environments. Trac lighting allows and equipment display controls allow the operator to customize their workspace for personal preferences. Ergonomic chairs and adjustable consoles compensate for differences in height and other physical characteristics.

Triple redundant power sources insure continuity of operations. The systems run off of a UPS of a bank of batteries charged by two Commonwealth Edison feeds. This is supplemented by a diesel generator.

The size of the area which had to accommodate the consoles and the telecommunications and information technology equipment provided another challenge. The number of system utilized by the Communications Center has grown over the years, but the size of the room has been constant. The project required packaging large quantities of equipment so that each operator had access to the necessary systems and so that the operators did not interfere with each other. And the upgrade had to be completed without interrupting the normal operations of the center.

The redesigned center has successfully incorporated the new system. The workstations allow each operator to function without causing interference to other operators. In addition the positions of the supervisor have been relocated so that they have better access to their staff. ■



Save the Date

IEEE Chicago/Rockford Consultants' Network A joint Affinity Group of the IEEE Chicago and Rock River Valley Sections

The IEEE Alliance of Consultants Networks (AICN) Workshop

Saturday, December 3, 2005

About the Topic:

The AICN workshop will be a valuable aid to both practicing and first-time consultants, and for potential consultants. You will be able to network with renowned consultants and with current and former officers and staff members of IEEE-USA.

Attendance at the workshop will earn Professional Development Hours.

The workshop will be held from approximately 8:30 am to 4:30 pm, with an on-site registration. The workshop will be held in the Wojcik Conference Center at William Rainey Harper College, 1200 W. Algonquin Rd., Palatine, IL 60067-7398. Further information about the conference center, including maps and directions, can be found at the conference center's web site: www.harpercollege.edu/wcc

Information:

The program and registration fees are still under development; information on these will be available at the following web sites: <http://www.drblank.com/coaction.htm> <http://www.ieeeusa.org/careers/business>

For additional information, please contact one of the program co-chairs: Ben Miller at consultnet@bmillerengineering.com Joe Auer at JAuerConsulting@worldnet.att.net

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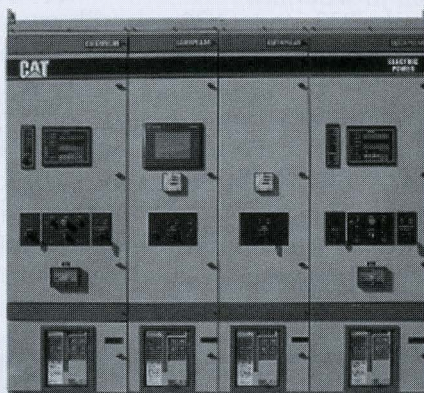
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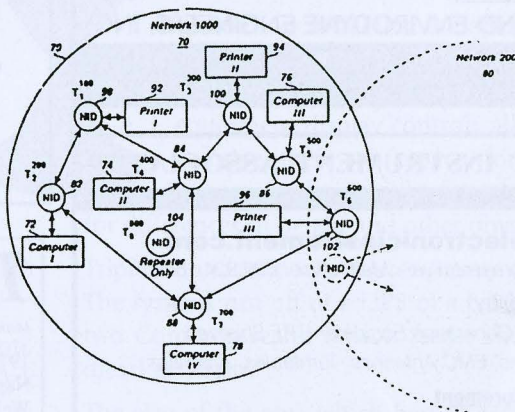
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