

# SCANFAX

March 2003

Volume 55, Issue 3



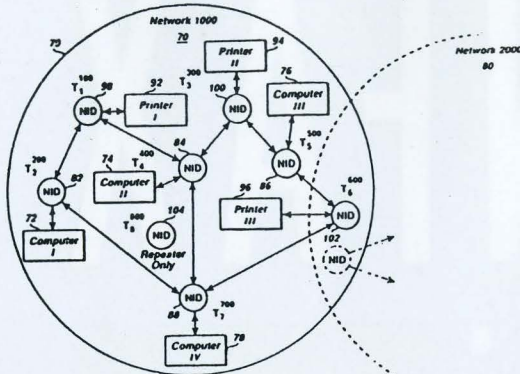
Chicago Section Website:  
[www.ewh.ieee.org/r4/chicago](http://www.ewh.ieee.org/r4/chicago)

A publication of the  
Institute of Electrical & Electronics Engineers  
— Chicago Section —

*Communications Technology*  
*Political Gridlock*  
*Puts Broadband*  
*Deregulation in*  
*Hands of FCC*



U.S. POSTAGE PAID  
NON-PROFIT ORG  
Permit No. 53  
Columbus, Wisconsin



## Masters of the Intellectual Property Maze®

Attorneys experienced in virtually every scientific and engineering discipline and concentrating in all facets of intellectual property law including

litigation, licensing, **WELSH & KATZ, LTD.** negotiation, client counseling and corporate identification programs, as well as protecting rights through trade secrets, patents, trademarks and copyrights worldwide.

120 S. Riverside Plaza • 22nd Floor • Chicago, Illinois 60606 • Telephone 312-655-1500 • Fax 312-655-1501  
IEEE MEMBER CONTACTS: A. SIDNEY KATZ AND JAMES A. SCHEER  
www.welshkatz.com

Washington Office: Crystal Plaza One • Suite 206 • 2001 Jefferson Davis Highway • Arlington, Virginia 22202-3603 • Tel: 703-415-4777



## Weldy/Lamont & Associates

Manufacturers Representative  
Engineered Products and Services

### AC distribution equipment 600V thru 35KV (50 or 60Hz)

- Transformers
- Distribution switchgear
- Busway
- Automatic transfer switches (mechanical and static)
- Metering

### DC power systems

- Switching Controlled Ferro, Mag-amp and SCR rectifiers
- DC to AC inverters
- Free standing rack systems
- Batteries

### Critical AC power systems

- UPS Systems — Single and Three Phase
- Power Distribution Units
- Static Switches
- Generator Paralleling Switchgear

Weldy/Lamont Assoc., Inc. / 1008 East Northwest Hwy, Mount Prospect, IL 60056 / 847-398-4510



Chicago Section:  
www.ewh.ieee.org/r4/chicago

A publication of the  
Institute of Electrical & Electronics Engineers  
— Chicago Section —

#### Chairman

Patrick Hennelly  
Phone 847-398-4510  
Fax 847-398-0597  
E-mail phennelly@ieee.org

#### Editor

Gerry Ryan  
Phone 708-445-7537  
Fax 708-445-7538  
E-mail: gerryr\_idcs@ameritech.net

Published for IEEE by  
Slack Attack Communications

#### Publisher

Barbara Slack

#### Advertising Sales

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

#### Printed By

Town & Country Printers  
Columbus, WI

SCANFAX (ISSN #0018-1297) is a monthly publication (except July and August) of the Chicago Section Institute of Electrical and Electronics Engineers, Business Office, c/o Western Society of Engineers, 28 East Jackson, Suite 1320, Chicago, IL 60604, (800) 898-4333 or (312) 253-4333. It is published by **Slack Attack Communications**, 5113 Monona Drive, Madison, WI 53716, (608) 222-7630. Printing is by **Town & Country Printers**, Columbus, WI 53925. For advertising information, contact Slack Attack Communications.

Subscriptions included in IEEE membership dues; non-member subscriptions: \$25 per year.

Address corrections should be sent to: IEEE Membership, 440 Hoes Lane, Piscataway, NJ 08854-1331 or by phone (800) 678-4333.

Meeting notices should be sent to graphics@slackattack.com

©Copyright 2002 by the Chicago Section Institute of Electrical and Electronics Engineers. Permission to reprint must be secured in advance of publication and credit given to author and SCANFAX.

# SCANFAX

March 2003  
Volume 55, Issue 3

## Feature

### Communications Technology

Political Gridlock puts Broadband Deregulation in Hands of FCC

## Upcoming Events

- 4 **Chicago Chapter of the IEEE Power Engineering Society**  
PES Distinguished Lecturer Series: Substation Integration & Automation - Approaches and Best Practices  
Wednesday, March 12, 2003
- 6 **IEEE Fox Valley Subsection and IIT-Rice Campus**  
Space Solar Power for Earth  
Wednesday, March 19, 2003
- 7 **IEEE EMC Society Chicago Chapter**  
A View of Electromagnetic Life Above 100 MHz  
Wednesday, March 19, 2003
- 7 **IEEE - IAS/IES Dinner Presentation**  
Application of Variable Frequency Drives  
Wednesday, March 19, 2003
- 8 **IEEE Chicago AP/MTT Societies - Joint with ED/CAS/SSC**  
Homeland Security Technology Issues  
Wednesday, March 26, 2003
- 9 **IEEE Chicago/Rockford Consultant's Network**  
Considerations in Setting Consulting Fees - Part II  
Monday, March 31, 2003

## Departments

- 9 **Employment Opportunities**
- 10 **Advertiser Index**
- 10 **Professional and Business Directory**

### CHICAGO SECTION EXECUTIVE COMMITTEE MEETING

Tuesday, March 11, 6:30 p.m.

DeVry DuPage, Room TBA, 1221 N. Swift Rd., Addison, IL  
No Registration Needed

## ATTENTION

### NEW BUSINESS OFFICE LOCATION:

The Institute of Electrical and Electronics Engineers Business Office has moved.  
The new address and phone number are as follows:

Western Society of Engineers  
28 East Jackson, Suite 1320  
Chicago, IL 60604  
312-253-4333 — 800-898-4333

Statements or opinions expressed herein are those of the author's and not necessarily those of the IEEE Chicago Section, its members, officers, or staff, or the editors of this publication. Readers using any information or materials described in this publication do so at their own risk. In no event will IEEE Chicago Section, its members, officers, or staff be liable for any damages resulting from use of this material and hereby expressly disclaim such liability. The publication of any advertisement is not to be construed as an endorsement of the product or service offered unless the advertisement specifically states that there is such an endorsement or approval by the organization.

# Communications Technology



## Political Gridlock Puts Broadband Deregulation in Hands of FCC

by Paul Zukowski

The golden age of the Internet lies ahead, according to the experts, when ubiquitous broadband access will transform the way people use the Internet. A Brookings Institution study estimates that if everyone had broadband it could be worth \$300 billion a year to the U.S. economy. Cable companies, phone companies, and satellite TV companies can get some form of broadband to about 80% of the country, yet only 10% of households subscribe, according to Jupiter Media Metrix.

One of the roadblocks is government regulations on the local Bell phone companies, says the high-tech lobbying group TechNet, a Silicon Valley association of high-tech executives from companies like Intel Corp. and

Cisco Systems Inc. TechNet released a report in early 2002 asking the Bush administration to make broadband a national priority and change the way local, state and federal regulations put an undue burden on the Baby Bells.

Even with the present restrictions, the Boston-based Yankee Group consulting firm estimates that broadband access will expand to one in four homes by 2005 and continue to grow for the rest of the decade. That makes it abundantly important which communications companies will control broadband and all the related consumer services that can be sold via a high-speed connection.

Things got off to a great start in the House of Representatives with the passage of the Tauzin-Dingell (HR.1542) bill, also known as the Internet Freedom and Broadband Deployment Act. The bill was aimed at aggressively deregulating the regulated Bell operating companies, but the Democrat-controlled Senate never brought the bill to a vote.

Tauzin-Dingell would have removed a

number of regulations that govern how much the local Bells must open their lines for us by competitors. The bill would allow the Bells to start offering long-distance without opening their local markets to competition, as is currently required. The phone companies contend that these requirements restrict their incentive to invest in more broadband service. Long-distance and cable companies objected vehemently, as did competing local phone companies, saying that the regional phone giants have been dragging their feet over sharing local lines with competitors.

In Illinois, SBC (formerly SBC Ameritech) supports the pending federal legislation that could free SBC from most regulation on its broadband service, including service, price and how much of its network competitors can use.

In October 1999, SBC announced an ambitious plan to expand the broadband market. Project Pronto would invest \$6 billion over three years to reshape the phone network into a high-speed data delivery service. The

plan was to extend the phone company's high-speed fiber-optic network beyond existing service nodes in central switching offices by building more than 10,000 remote terminals in neighborhoods throughout its system. The remote terminals would be the new connecting place between the "last mile" copper phone lines and the high-speed fiber network for delivery of both voice and data services to homes and businesses.

The rollout began to stall when state regulators started demanding that competing companies be able to connect to SBC's network both at the remote terminals as well as at the central switching offices.

SBC stopped Project Pronto construction in Illinois in March 2001, essentially because of that issue. SBC was especially critical of proposed rules that would force it to unbundle its data transmission service network, allowing competitors to pick and choose which parts of SBC's network they want to lease. SBC says unbundling puts a heavy cost burden on it, forcing it to spend hundreds of millions of dollars extra with no improved service for its own customers. Meanwhile the cable TV industry has virtually no regulatory controls

over its broadband service.

SBC's disappointing financial results in 2001 also meant that slowing the rollout of DSL was a way to cut expenses. Consumer groups note that both cable and phone-based broadband services rose in price during 2001 despite signs that costs were coming down for service providers. ARS Inc., a high-tech

*Even with the present restrictions, the Boston-based Yankee Group consulting firm estimates that broadband access will expand to one in four homes by 2005 and continue to grow for the rest of the decade.*

market research firm based in La Jolla, Calif., says basic consumer DSL service increased 10 percent to \$51.68 a month on average in the first nine months of 2001, while cable modem service increased 11 percent to \$44.17 a month.

ARS says that high prices, a soft economy and lack of compelling Internet content are important reasons why consumers have been

slow to adopt broadband service.

SBC raised the price for its basic DSL service in early 2001 by 25 percent to \$50 a month. Even with Project Pronto on hold, SBC claimed it could deliver DSL service to 58 percent of its more than 60 million customers at the end of 2001.

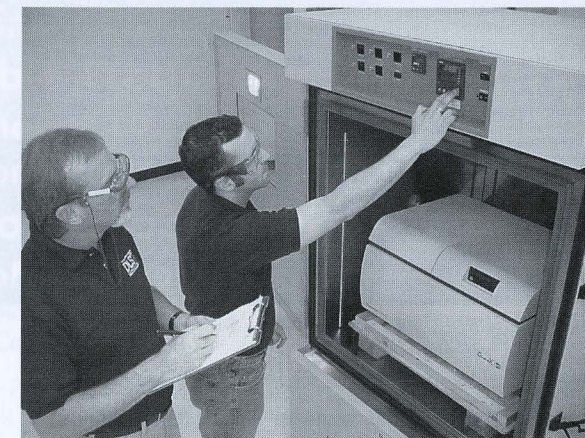
Exactly what the Federal Communications Commission will decide is unclear, although Chairman Michael Powell has had a market-oriented approach to regulation thus far. Powell ordered an intensive review of all regulations that affect broadband deployment a year ago, and with a Republican-controlled Congress, the way would seem open for gradual deregulation of the former Bell phone companies. New rules may streamline the approval process of broadband projects or call for uniform regulations at the state, and local level. What is clear is that broadband is a vitally important link that must be in place for the Internet to reach its full potential.

*Paul Zukowski is a freelance writer specializing in business and technology.*

## New € Compliance Program

Designed for:

- Medical Devices
- Laboratory Equipment
- Test and Measurement Equipment
- Substance Analyzers
- Preparation Equipment
- Control Equipment



EMC and Product Safety compliance specializing in EN 60601-1, EN 61010 and EN 61326. CB Scheme and UL available.

For more information call 847-537-6400 today.

D.L.S. Electronic Systems, Inc.  
D.L.S. Conformity Assessment, Inc.  
1250 Peterson Drive  
Wheeling, IL 60090-6454

www.dlsemc.com  
sales@dlsemc.com



## EVENING MEETING

### Chicago Chapter of the IEEE Power Engineering Society PES Distinguished Lecturer Series: Substation Integration & Automation - Approaches and Best Practices Wednesday, March 12, 2003

**John D. McDonald, P.E.**, KEMA Consulting

#### About the Topic:

The meeting will cover three primary areas - system architecture, protocols and a utility case study. Definitions of Intelligent Electronic Device (IED), IED Implementation, IED Integration, and Substation Automation will be discussed.

There will then be a review current industry substation integration and automation projects, including a sample utility case study including the functional system architecture that was in the Request For Proposal (RFP), and the actual vendor/integrator architecture installed in the utility's substation to meet the functional requirements.

#### About the Speaker:

John D. McDonald, P.E., is Senior Principal Consultant and Manager of Automation, Reliability and Asset Management for KEMA Consulting. In his 29 years of experience in the electric utility industry, John has developed power applica-

tion software for both Energy Management System (EMS) and Distribution Management System (DMS) applications, developed distribution automation and load management systems, managed EMS and DMS projects, and assisted Intelligent Electronic Device (IED) suppliers in the automation of their IEDs. John is currently assisting electric utilities in substation automation, distribution Supervisory Control And Data Acquisition (SCADA), communication protocols and Distribution Management Systems.

John received his B.S.E.E. and M.S.E.E. (Power Engineering) degrees from Purdue University, and an M.B.A. (Finance) degree from the University of California-Berkeley.

He actively serves his profession as Secretary of IEEE PES and numerous related organizations. John is also a published author with his latest work, "The Electric Power Substation Engineering Handbook" due out this June. In addition, he teaches an EMS/DMS course at the Georgia Institute of Technology, a Substation Automation course at Iowa State University, and substation automation, distribution SCADA and communi-

cations courses for the American Public Power Association and for various IEEE PES local chapters as an IEEE PES Distinguished Lecturer.

#### Time:

5:30 PM Social  
6:00 PM Dinner  
7:00 PM Presentation  
8:30 PM Adjourn

#### Location:

ComEd Commercial Center  
1919 Swift Drive  
Oak Brook, IL 60523  
(near the I-290 and I-294 interchange)

#### Reservations:

Dinner tickets can be purchased at the door. Please call the IEEE Business Office at (312) 253-4333 to make your reservation. For more information, please visit the Chicago Chapter IEEE PES web site: <http://peschicago.org>

## EVENING MEETING

### IEEE Fox Valley Subsection and IIT-Rice Campus Space Solar Power for Earth Wednesday, March 19, 2003

**Jim Plaxco**, National Space Society

#### About the Topic:

An examination of a proposal, first made in 1968, to use large orbiting solar arrays to beam energy to Earth for conversion into electricity. The presentation will cover the system architecture, the engineering challenges, and the costs/benefits of such a system.

#### About the Speaker:

Jim Plaxco is a NASA JPL Solar System Ambassador and a director of the National Space Society. Mr. Plaxco has been writing and speaking on the subject of space exploration and planetary science for 14 years.

#### Location:

IIT's Rice Campus  
201 East Loop Road  
Wheaton, IL 60187

Take Rt.56/Butterfield Rd. to first stoplight east of intersection of Butterfield & Naperville roads. Turn north onto East Loop Road (Grady's Restaurant and Phillip's 66 Gas Station on the corners); the campus will be on your right about a block north of Butterfield Road. More detailed directions and a map are available at <http://www.rice.iit.edu/directions.html>

#### Sponsorship:

IEEE's Fox Valley Subsection and Illinois Institute of Technology's Center for Professional Development (Rice Campus).

#### Time:

6:00 PM Networking time  
7:00 PM Presentation

#### Reservations:

Reservations are not required. The Fox Valley subsection web page is at the following address: <http://www.ieee.org/foxvalley/>

## EVENING MEETING

### IEEE EMC Society Chicago Chapter A View of Electromagnetic Life Above 100 MHz Wednesday, March 19, 2003

**Dr. Lothar (Bud) O. Hoeft**, Consultant, Electromagnetic Effects

#### About the Topic:

Interest in electromagnetic life above 100 MHz has increased in the past decade, primarily due to higher speed digital electronics and telecommunications. In this frequency regime, many of the usual simplifying assumptions are no longer true and the EMC engineer must adopt a new way of looking at design problems. An intuitive approach allows the engineer to visualize the system as a collection of components whose characteristics can be estimated, or if necessary, measured. Effects, such as parasitic effects, absorption, radiation losses and wavelength effects become more significant above 100 MHz, but are reasonably well understood.

#### About the Speaker:

Dr. Bud Hoeft received his PhD in physics from Pennsylvania State University. He worked as an

R&D scientist for the U.S. Air Force on acoustical noise control, bionics, nuclear weapon simulation, pulse power technology and international R&D coordination. In addition, he has designed and built test systems hardened to electromagnetic effects. Dr. Hoeft is a Certified EMC Engineer and is now a private consultant. He has presented numerous papers and tutorials on shielding and electromagnetic effects at IEEE-EMC, NEM, Zurick-EMC, Wroclaw-EMC, Lightning and IICIT symposia. In 2001, he was appointed Distinguished Lecturer of the IEEE EMC Society.

#### Location:

Elite Electronic Engineering  
1516 Centre Circle  
Downers Grove, IL 60515  
Phone: 630-495-9770

#### Time:

6:30 PM Social Hour  
7:00 PM Meeting Start

#### Reservations:

R.S.V.P. to Steve Laya (Elite Electronic Engineering)  
Phone: 630-495-9770

#### For More Information:

[www.ewh.ieee.org/soc/emcs/chicago/](http://www.ewh.ieee.org/soc/emcs/chicago/)

## EVENING MEETING

### IEEE - IAS/IES Dinner Presentation Application of Variable Frequency Drives Wednesday, March 19, 2003

#### About the Topic:

Variable Frequency Drives, or VFDs are commonly applied to pumping and fan applications when there is a need to control the flow. The careful selection of the VFD will go a long way to achieving the desired results without unintended consequences. John will cover a basic overview on how a VFD's works. Specific subjects will include when NOT to use a VFD, special environmental considerations, harmonics, sizing, bypass caveats, electrical system interactions, motor cable length considerations, motor interactions, and some special considerations when applying medium voltage drives. Time will be allowed for specific audience questions.

#### About the Speaker:

Mr. Cope has specified, applied and supported electronic motor controls for motors ranging from fractional to multi-thousand horsepower

over the last 27 years. He has seen motor controllers design evolve from vacuum tubes to discrete transistors, to integrated circuits, to microprocessors. John has been an application and sales engineer for Robicon Corp. and a sales engineer for Benshaw Corp.

#### Location:

Costa's (Greektown)  
340 S. Halsted St.  
Chicago, IL

Costa's is located in Greektown on the corner of Van Buren and Halsted. For detailed directions and a map, see [www.iaschicago.com](http://www.iaschicago.com)

#### Time:

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

#### Cost:

Your cost includes the presentation and a four-course dinner with a choice of the main entry - roast lamb, chicken, or fish (vegetarian or special dietary meals available upon request). Cost is \$25 IEEE Member and \$30 non-member. Valet parking is included with your meal.

#### Reservations:

Please call the IEEE Business Office at (800) 898-IEEE or (312) 253-4333 with your reservation. Please note any special meal requests at the time of the reservation. You can also make your reservations on line at [www.iaschicago.com](http://www.iaschicago.com)

Note: For P.E. licenses that require continuing education for renewal, attendance at IEEE Technical Meetings is acceptable as one Professional Development Hour.

## EVENING MEETING

### IEEE Chicago AP/MTT Societies - Joint with ED/CAS/SSC Homeland Security Technology Issues Wednesday, March 26, 2003

**Dr. Mitra Dutta**, University of Illinois at Chicago

#### About the Topic:

The creation of the Department of Homeland Security has been created to collect information and quickly respond to threats to the United States of America. The challenges to accomplish these goals will require new technological advances. Dr. Dutta is on a National Research Council Committee to provide recommendations to the US Army on which areas of technology need to be addressed. These technologies cover the four scenarios of Indications and warning, denial and survivability, recovery and consequence management and finally attribution and retaliation.

#### About the Speaker:

Professor Dutta is the author and co-author of over 350 publications and presentations and twenty-eight US and Canadian patents. She is the recipient of various prestigious awards such as several Army R&D Achievement Awards, Paul A. Siple Memorial Award and the Harold Jacobs Award for Outstanding Achievements in Army Research. Professor Dutta's broad range of experience in the areas of Electrical and Computer Engineering includes adjunct professorships at Rutgers University, The University of Maryland, North Carolina State University

and the University of North Carolina at Chapel Hill. She was appointed to the Senior Executive of Service at the United States Army and acted as the Deputy Director of the U.S. Army Research Office. She has also served as Associate Director of the Engineering Sciences Directorate at the U.S. Army Research Office and Director of the Physics Division of the Physical Sciences Directorate at the Army Research Laboratory and was responsible for establishing and managing the Center for Excellence in Microelectronics Research.

Dr. Dutta is the first woman in 51 years to receive the prestigious IEEE Harry Diamond Memorial Award in 2000 for her innovative design, characterization and realization of high performance heterostructure optoelectronic devices, and establishment of major research programs in the field. She is a Fellow of the IEEE, Fellow of the Optical Society of America, Fellow of the American Association of the Advancement of Science and Fellow of the Army Research Laboratory and currently heads the Electrical and Computer Engineering Department at the University of Illinois at Chicago. Professor Dutta's research interests are in the areas of: optoelectronics devices and novel quantum and nanoscale devices, optical characterization of optoelectronic devices and

structures, wide band gap structures and devices, bio-optoelectronics. For a listing of publications see [http://www.ece.uiuc.edu/temp/ECE\\_people/dutta1.htm](http://www.ece.uiuc.edu/temp/ECE_people/dutta1.htm).

#### Time:

7:00 PM Social (Free Sandwiches, Snacks, and Beverages)

7:30 PM Presentation

#### Location:

Motorola

1301 Algonquin Road

Schaumburg, IL 60196

Enter Campus using Gate A, westmost gate off Algonquin Road, west of Meacham. Door 13 is under Motorola sign on west face of six story building.

#### Reservations:

Preregistration is required. For reservations, please call the IEEE Message Center at (800)898-IEEE by 1:00 PM Monday, March 24th. For information about the meeting E-Mail [ron\\_kollman@ieee.org](mailto:ron_kollman@ieee.org).

## PRESS RELEASE

January 27, 2003

### ECE's Most Senior Faculty Member Dies

Urbana, IL — M. Stanley Helm (BSEE '33), MSEE '34), ECE's longest serving faculty member, died January 21, 2003, in Urbana. He had been hospitalized since December 26.

His affiliation and dedication to ECE spanned more than 70 years—first as a student and then as a faculty member in the power area. Helm co-authored a textbook, "Circuit Analysis by Laboratory Methods," that provided a critical link between classroom lecture and hands-on exper-

imentation while also addressing proper data-recording techniques and technical writing.

As a researcher, Helm made significant contributions to the field now known as power quality. Although he retired in 1982, Helm continued to make valuable contributions to the ECE Alumni Association Advisory Board, which he served on for 15 years.

A memorial service/celebration is being planned for the spring. Memorial contributions may be made to the Helm Fund for Excellence in Power through the U of I Foundation, 1305 W. Green Street, Urbana, IL 61801-2962.

To read the full obituary, go to the website: <http://www.ece.uiuc.edu/enews/helm.html>

To read previous E-News releases, visit our web

site at: <http://www.ece.uiuc.edu/enews/>. ECE Illinois E-News is the periodic electronic-mail news service of the University of Illinois at Urbana-Champaign Department of Electrical & Computer Engineering.

We welcome your feedback. Please e-mail your comments to: [ece\\_e-news@ece.uiuc.edu](mailto:ece_e-news@ece.uiuc.edu).

Alumni, colleagues, and friends of the Department may subscribe to this and other U of I ECE email publications at the following: <http://www.ece.uiuc.edu/subscribe.asp>

Use the following link to remove yourself from this mailing list:

<http://www.ece.uiuc.edu/unsubscribe.asp?9ED73F2B-BB87-436E-8A53-61C3BF8262B4>

## EVENING MEETING

### IEEE Chicago/Rockford Consultant's Network Considerations in Setting Consulting Fees - Part II Monday, March 31, 2003

#### About the Topic:

In addition to networking and sharing leads and referrals, there is usually a guest speaker. On March 31, 2003, instead of a speaker, we plan to continue our January 21st open discussion on "Considerations in Setting Consulting Fees (PART II)". Members will share ideas and methods they have used successfully for setting client fees and will discuss the reference material provided at the January 21st meeting. We will delve further into the issues of reasonableness and competitiveness in developing a fee structure, as well as look at fixed price vs. time-and-materials contracts vs. retainers. Members and non-members are invited to both the meeting and the optional dinner. (Reservations are NOT required).

#### Meeting Location:

Palatine Public Library  
700 North Court  
Palatine, IL 60067  
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 PM Optional Group Dinner at Bakers Square (Order off the menu – reservations not required)

7:30 PM Meeting – Open Discussion

9:00 PM Adjourn

#### Information:

Information about the network can be obtained by e-mail to either [benmiller@worldnet.att.net](mailto:benmiller@worldnet.att.net) or [JAuerConsulting@worldnet.att.net](mailto:JAuerConsulting@worldnet.att.net), or visit our website at:

<http://www.drblank.com/coaction.htm>

See you on MARCH 31, 2003, and bring consultants and those who aspire to be consultants for a pleasant and informative evening of networking. Meetings are usually held on the last Monday of odd-numbered months.

## PRESS RELEASE

### North Shore Radio Club Hamfest

Sunday - March 23, 2003

Grayslake

Electronic equipment, amateur radios, computers, parts and accessories will be featured at The NS9RCfest, Sunday, March 23. This annual giant Hamfest and Electronic Job Fair is sponsored by the North Shore Radio Club and is attended by Amateur Radio, electronic and computer hobbyists from all over the Midwest. It is a great place for young electronic enthusiasts to meet and for job seeking engineers and technicians to make connections.

NS9RCfest also features commercial exhibitors, amateur radio licensing testing (from 9 AM to noon), information displays and hourly prize drawings. North Shore Radio Club Hamfest Chairman Jacob Fishman, NEØNS, says, "Come on out and find a good deal, see the equipment and learn new applications of wireless and computer technology. This is an excellent opportunity to locate a missing part, instruction manual or connector. You will be able to purchase technical equipment, or take an amateur radio license test. It is a good time to meet friends, check out collectibles to buy or sell and just have fun."

The all-indoor event will be held Sunday, March 23 from 8 AM to 2 PM at Lake County Fairgrounds, Rts. 45 and 120, Grayslake, IL. Admission to the event is \$5 for a double-stub prize ticket in advance or \$7 for a single-stub prize ticket at the door. Seller's tables are \$20 - \$25. Parking is free. Repeaters 147.345 +0.6 MHz 107.2 Hz Tone and 442.075 +5.0 MHz 100.0 Tone.

To learn more and to purchase tickets and tables with credit card, go to [www.ns9rc.org](http://www.ns9rc.org) or call (847) 291-4160.

## EMPLOYMENT OPPORTUNITIES

Nationwide engineering firm is expanding its Chicago office. We are seeking both entry level and experienced **ELECTRICAL ENGINEERS** to assist us in our growth. Must have BSEE and excellent communication skills. PE or EI would be a plus.

Experienced Electrical Engineer position requires background in 480-volt power distribution for motors, equipment, and lighting systems integral to water, wastewater, commercial, and transportation projects. Experience in SCADA controls and instrumentation systems is helpful.

We offer an attractive salary, professional growth potential, immediate ESOP eligibility, no-interest computer loans, and other outstanding benefits.

If you are interested in working with a dynamic, professional team, send your resume to:

### Consoer Townsend Envirodyne Engineers, Inc.

303 E. Wacker Drive, Ste. 600 Chicago, IL 60601

Attn: Human Resources, Dept. S.A.

Or fax to: (312) 938-1109

EOE

M/F/D/V

# PROFESSIONAL AND BUSINESS DIRECTORY

Transportation Engineering • Water Resources Engineering

**CTE ENGINEERS**  
**CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.**  
 303 East Wacker Drive, Suite 600, Chicago, Illinois 60601  
 (312) 938-0300 www.cte-eng.com

## ELECTRONIC INSTRUMENT ASSOCIATES

Chicago 630-924-1600 • Milwaukee 262-677-1600  
 Manufacturer's Representative info@electronicinstrument.com

**Electromagnetic Compatibility Test Equipment**  
 Power Amplifiers, Transient Generation Equipment, Shielded Rooms,  
 Anechoic Chambers, EMC Antennas, Turntables, Field Probes, etc.

**Electrical Parameter Measurement Instrumentation**  
 AC & DC Current, Voltage, Watt, VAR Transducers, Sensors, Signal  
 Conditioning, Energy Monitoring Instruments, Demand / Submetering

**EffectiveEdu.com** 

Effective solutions for your distance learning needs.

Phone: (630) 858-6161, ext. 12 anu@goinfo.com  
 www.effectiveedu.com

**Gus Berthold Electric Co.**  
 1900 W. Carroll Ave., Chicago, IL 60612  
 Switchboards Ph: (312) 243-5767  
 Panelboards Fax: (312) 243-5811  
 Motor Controls sales@bertholdelectric.com

**LEE BUTTER & ASSOCIATES**  
 ELECTRICAL MANUFACTURERS REPRESENTATIVES  
 1125 W. LUNT AVE. (800) 323-1802  
 ELK GROVE, IL 60007 FAX (847) 437-7609  
 847/437-7600 lee\_butter@msn.com

**LEHMAN COMPANY**  
 Electrical Manufacturers Representative  
 PHONE: 630-942-1900 FAX: 630-942-1955

**PANATROL**  
 Automation and Controls  
 www.panatrol.com  
 info@panatrol.com  
 7481 S. Sayre Ave. • Bedford Park, Illinois  
 Phone: (708) 496-3080 • Fax: (708) 496-2770  
 • PLC and Computer Programming  
 • Electrical Design and Drawings  
 • Engineered Factory Automation  
 • Custom Control Panels U/L Listed  
 • Motor Controls CSA Certified

**RFcomps.com** **RF & Microwave Components Distributor**  
 P.O. Box 1822  
 Highland Park, Illinois 60035-7822  
 847-926-9060  
 847-926-9061  
 Visit www.RFcomps.com for a broad selection of RF & Microwave components.  
 Attenuators, cable assemblies, circulators & isolators, connectors, couplers, terminations, and more  
 www.RFcomps.com

## T&D Products, Inc.

Manufacturers Representatives - Transmission & Distribution Electrical Equipment

650 East Diehl Road, Suite 107 Phone: (630) 245-9130  
 Naperville, IL 60563 Fax: (630) 245-9135  
 Web: www.tdproducts.com email: info@tdproducts.com

ABB Inc., Atkinson/EPRI, Calvert, Carter & Crawley, Central Electric,  
 CGIT, Cyberex, Hamby Young, IPC Resistors, MTI Technologies,  
 Shallbetter, Tierney Electrical

Transformers, Switchgear, Breakers, Relays, Capacitors, Harmonic Filters,  
 Electrical Buildings, Power Resistors, Synchronizing Switchgear, Non-Seg  
 Bus, Iso Phase Bus, Batteries, UPS Systems, Chargers, Substation Design  
 and Supply.



## Education Within Your Reach

<http://online.engr.uiuc.edu>

Programs in CS, ECE, & ME via the Internet.  
 UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Support all of these  
 fine businesses that  
 support **SCANFAX.**

## ADVERTISER INDEX

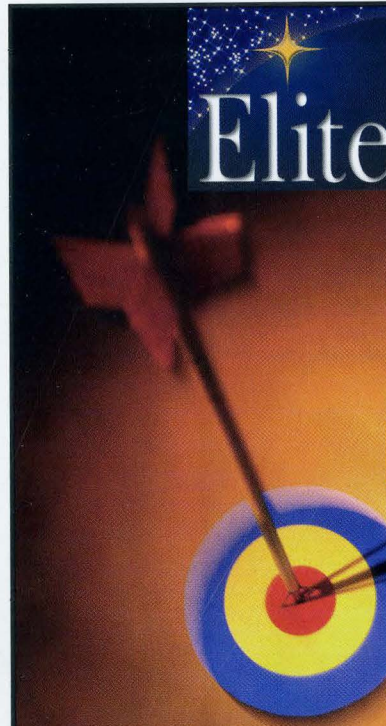
|                                    |     |
|------------------------------------|-----|
| DLS Electronic Systems, Inc. ....  | 5   |
| Elite Electronic Engineering ..... | IBC |
| Elmhurst College .....             | BC  |
| Weldy/Lamont & Associates .....    | IFC |
| Welsh & Katz Ltd. ....             | IFC |



**Little Price  
Big Reward.**

Call today to reserve  
your advertising space.

**608-222-7630**  
 Beth Vander Grinten  
 Slack Attack Communications  
 bethv@slackattack.com



**Elite Expertise.**

Since 1954, Elite has been a recognized leader in EMC, providing world-class test and consulting services. We continue to build upon our legacy of EMC excellence by adding staff, equipment, facilities, and new services.

**Now Offering Enhanced HIRF Capability**  
 600V/m- CW/AM • 2500V/m Pulsed RF

Contact Elite today for a complete list of services and to receive an analysis of the regulatory compliance requirements for your product.

**Elite Electronic Engineering Inc.**  
 1516 CENTRE CIRCLE, DOWNERS GROVE, IL 60515  
**1-800-ELITE-11** [1-800-354-8311]  
 www.elitetest.com  
 FC Canada CE

A2LA Accredited  
 NVLAP Accredited  
 ANSI Accredited  
 DESC Approved  
 NARTE Certified Engineers

**TEST LABORATORY**

- **Wide Range of EMC Test Capability**  
**MILITARY AND COMMERCIAL AVIATION**  
 200V/m HIRF to 40GHz, Lightning Testing, Large system capabilities
- AUTOMOTIVE**  
 DaimlerChrysler and Ford Approved, GM Correlated, Nissan, Toyota, BMW, others  
 Whole Vehicle EMC Test Facility; Truck and Ag Equipment Specialists  
 European Union "e-Mark" Testing for ESA's and Whole Vehicle
- FCC, CE MARK, TELECOM**  
 Regulatory Experts; Test Experts; EMC Design Experts  
 FCC Telecommunication Certification Body (TCB)  
 European Union Conformity Assessment Body for CE Mark Approvals
- **Environmental Stress Testing and Electrical Safety Services**  
 Full Environmental Stress Test Laboratory; Temp, Humidity, Vibe, Shock, Rain, Dust, Salt Fog, and many others
- **Engineering Design Consulting Services**  
 FCC/CE Mark Regulatory Experts, EMC Design Analysis and EMI Suppression, EMI Simulation and Circuit Modeling Services

In graduate study at Elmhurst, you'll

# learn more.

## **Master of Science in Computer Network Systems**

Our master's program in computer network systems provides professionals with state-of-the-art technical knowledge and a lot more. You will learn the ins and outs of WANs, LANs, Visual BASIC, distributed databases, VB script, Active Server Pages, and client server systems. You also will sharpen your communication skills, develop your management competencies, and explore the ethical issues of a fast-moving profession.

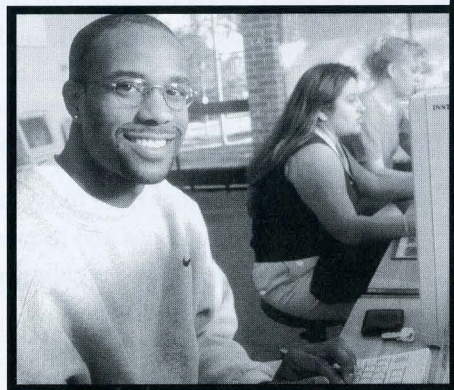
Elmhurst takes a distinctive approach to graduate study. We keep classes small, so each student works closely with our talented faculty. What's more, because you go through the entire program in cohorts, you will gain team-building experience and build a key professional support network.

All classes are scheduled part-time, in the evening. Challenging, innovative, intensely practical: at Elmhurst, you will get more than a master's.



**Elmhurst College**

*More than a master's...*



For information or to arrange a campus interview, call us at (630) 617-3030, or e-mail us at [gradadm@elmhurst.edu](mailto:gradadm@elmhurst.edu). The College is located at 190 Prospect Avenue, Elmhurst, Illinois 60126.