

The



IEEE Newsletter

PUBLICATION OF THE NORTH JERSEY SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

NJ Communications Society:

Digital Audio Broadcasting

On January 21, 2003, the IEEE North Jersey Section Communications Society Chapter along with NJIT will host a presentation on "Digital Audio Broadcasting." The speaker will be Dr. Carl-Erik W. Sundberg.

About the Talk

The move to digital is a natural progression taking place in all aspects of broadcast media. This is no less true for audio broadcasting which has taken a unique development path in the United States. This path has been heavily influenced by a combination of regulatory and migratory (from analog to digital) requirements specific for the US market. This has resulted in a unique set of requirements on source coding, channel coding and digital modulation methods to make these systems a reality.

This talk outlines the technical development of the terrestrial wireless broadcasting systems in the US providing details on specific channel coding designs and adding perspective on why specific designs were selected. AM and FM systems are about to be introduced in the market place. These so called in-band on-channel systems are also briefly compared to other systems such as Eureka 147 and DRM.

References

[1] C-E. W. Sundberg et al "Technical Advances in Digital Audio Radio Broadcasting", Proceedings of the IEEE, pp 1303-1333, August 2002.

[2] www.ibequity.com

About the Speaker

Carl-Erik W. Sundberg received MSEE and Dr. Techn. Degrees from the University of Lund, Lund, Sweden in 1966 and 1975 respectively. From 1977 to 1984 he was a Research Professor (Docent) in Telecommunication Theory, University of Lund. From 1984 to 2000 he was a Distinguished Member of Technical Staff (DMTS) at Bell Laboratories, Murray Hill, NJ, and during

2001 he was a DMTS at Agere Systems, Murray Hill. Currently he is a Senior Scientist at SundComm, Chatham, NJ, and at iBiquity Digital Corp., Warren, NJ. His research interests include source and channel coding, digital modulation, fault-tolerant systems, digital mobile radio, digital audio broadcasting, spread-spectrum, digital satellite systems and optical communications. He has published over 95 journal papers and contributed over 140 conference papers. He has 67 patents, granted and pending. He is a coauthor of *Digital Phase Modulation*, (New York: Plenum, 1986), *Topics in Coding Theory*, (New York: Springer-Verlag, 1989) and *Source-Matched Digital Communications* (New York: IEEE Press, 1996). In 1986 he received the IEEE Vehicular Technology Society's Paper of the Year Award and in 1989 he was awarded the Marconi Premium Proc. IEE Best Paper Award. Two of his papers were selected for inclusion in the IEEE Communications Society 50th Anniversary Journal Collection Volume 2002. Dr. Sundberg is a Fellow of the IEEE and is listed in Marquis Who's Who in America.

All Welcome!

You do not have to be a member of the IEEE to attend. Bring your friends.

Time: 4:45 to 6:00 PM (refreshments start at 4:30 PM), Tuesday, January 21, 2003.

Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Directions are available at www.njit.edu.

Information: Dr. Hongya Ge, (973) 642-4990 (ge@njit.edu) or check <http://web.njit.edu/~ieeenj/comm.html> for the latest updates.

Newly Elected IEEE Fellows

The North Jersey Section IEEE congratulates the following members who were elected to the Fellow grade:

Dr. Will Edward Leland

"For contributions to the characterization of traffic on data networks."

Dr. Thomas Louis Marzetta

"For contributions to the theory of multidimensional signal processing and multiple-antenna communications."

Dr. Mengchu Zhou

"For contributions to Petri nets and their applications."

2003 IEEE John von Neumann Medal

Alfred Aho

"For contributions to the foundations of computer science and to the fields of algorithms and software tools."

JANUARY 2003

January 2003

Volume 49, Number 7

Publication No: USPS 580-500

"The IEEE Newsletter" (North Jersey Section), is published monthly except June and July by The Institute of Electrical and Electronics Engineers, Inc. Headquarters: 3 Park Avenue, 17th Floor, New York, NY 10016-5997. \$1.00 per member per year (included in annual dues) for each member of the North Jersey Section. Periodicals-class postage paid at New York, NY and at additional mailing offices. Postmaster send address changes to: "The IEEE Newsletter", 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331. USPS 580-500 (ISSN 1076-3732).

NEWSLETTER STAFF

Editor Keith Saracinello
Business Manager..... Theresa Saracinello

Deadline for receipt of material is the 1st of the month preceding the month of publication. All communications concerning editorial and business matters, including advertising, should be sent to the Business Manager via e-mail at k.saracinello@ieee.org or to *The IEEE Newsletter*, c/o Keith Saracinello, 25 Messenger Ln, Ringoes, NJ 08551, (908) 791-4067.

IEEE NJ SECTION HOME PAGE

<http://www-ec.njit.edu/~ieeenj/>

IEEE NJ SECTION NEWSLETTER HOME PAGE

<http://www-ec.njit.edu/~ieeenj/NEWSLETTER.html>

REPORT ADDRESS CHANGES TO:

IEEE Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, (732) 981-0060. It is not necessary to inform the North Jersey Section when you change your mailing address. "The IEEE Newsletter" and other section mailings use a list provided by IEEE's national headquarters.

SECTION OFFICERS

Chairman Dr. Durga Misra
dmisra@njit.edu (973) 596-5739
Vice-Chairman-1.....Rodney Cole
rgcole@ieee.org (973) 299-9022 Ext. 2257
Vice-Chairman-2.....Har Dayal
har.dayal@baesystems.com
TreasurerDr. Edward (Ted) Byrne
flatland@compuserve.com (973) 822-3219
SecretaryDr. Sanghoon Shin
s.shin@ieee.org (973) 492-1207 Ext. 22

Members-at-Large:

Bhanu Chivakula (b.chivakula@computer.org)
Naz Simonelli (naz@sprynet.com)
Dr. Richard Snyder (r.snyder@ieee.org)

The North Jersey Section Executive Committee usually meets the first Wednesday (except holidays and December) of each month at 7:00 PM. Meetings are open to all members. For information on meeting agenda contact Secretary Dr. Sanghoon Shin at (973) 492-1207 Ext. 22, s.shin@ieee.org.

NJ EMS and Computer Chapter: Managing Emerging Technologies

On Monday, January 13th, 2003, the IEEE North Jersey Section Engineering Management Society and Computer Chapters will host a presentation on "Managing Emerging Technologies" by Joe Chizmarik.

About the Talk

Managing new IT technology is becoming more of a challenge as it requires not only integration with existing operations but also business process redesign from an enterprise perspective. However, the rewards of a new strategic infrastructure make it all worthwhile.

The presentation will cover the following:

- Survey of key business technology areas: XML, Web Services & Privacy
- Secure Computing & Communications Platforms
- Business Process Management, Six Sigma & ROI
- Knowledge Management / Business-on-a-Chip / Industry-on-a-Chip
- Conclusions

About the Speaker

Mr. Joe Chizmarik, founder of The Knowledge Sculptors, an Information Technology consultancy, has served as the firm's President since its inception in 1988.

Also known as 'BJ The Cyber DJ', Mr. Joe Chizmarik hosts his own broadcast and webcast edutainment radio talk show, 'Cyber On! America!' discussing the Internet and its social ramifications. Mr. Chizmarik also has been a panelist speaking on XML as well as on the Humanistic Uses of Technology.

He is currently on the graduate faculty of the Management Department, Polytechnic University, NY, NY. Mr. Chizmarik's honors include placement in *The International Who's Who of Information Technology* (1998-2003) and in the *Who's Who Among Executives & Professionals*, Millennium Edition.

All Welcome!

You do not have to be a member of the IEEE to attend. Bring your friends. There will be a short Computer Chapter business meeting prior to the talk to elect new officers.

Time: 7:00 PM, Monday, January 13, 2003. Pre-meeting dinner at 6:00 PM.

Place: Public Meeting Room, Morris County Library, 30 E. Hanover Ave, Whippany, NJ, (973) 285-6930.

Information: Howard Leach (908) 540-1283 or h.leach@ieee.org.

North Jersey Spring 2003 Student Presentation Contest

The new Spring 2003 Student Presentation Contest is coming up! The North Jersey Section will be holding a presentation contest scheduled for late-February or early-March of 2003. This contest has been held in years past and its overwhelming success in generating student participation and interest make it an fantastic event for up and coming engineers. This year's contest will feature similar prizes (\$\$\$) and have graduate and undergrad categories.

The main focus of the presentation contest is to give students an opportunity to sharpen their communication skills, and help prepare for real life situations as practicing engineers and researchers. Additionally, the North Jersey Section contest provides an excellent chance for students to practice for the Region I Student Paper contest in the spring.

The contest at the North Jersey Section level is also supplemented by awarding cash prizes to the three best presentations in both graduate and undergrad categories. All engineering students are encouraged to participate in submitting team or individual presentations on any project work related to engineering. This local contest does NOT require students to write a full paper, just a slide-based presentation on technical or non-technical work is sufficient. Senior design projects, lab projects, personal engineering hobbies, engineering policy, etc., are great topics to submit. Moving onto the regional contest requires submitting a short written paper.

The details of contest rules, judging criteria, viable topics for presentations, and abstract form will be the same as last year. Also if you would like to get an idea of what topics would be appropriate or how you can prepare your abstract, take a look at winners from past years at the NNJ IEEE SAC homepage in the archive section.

This year's North Jersey Section Contest will be open to graduate and undergraduate students and first/second/third place prizes will be awarded in each category. The exact date and time will be announced at they become available. All participants **must** submit an abstract by filling in the form available at the SAC website to qualify as a contest participant.

Any and all questions can be emailed to the contest organizer, a.j.patel@ieee.org and check out the website:

http://ewh.ieee.org/r1/north_jersey/sac

North Jersey Student Activities Committee and GOLD Seek Volunteers and Speakers

The NNJ IEEE SAC and GOLD are seeking new volunteers to help conduct business at the section level for the benefit of students in the North Jersey section and surrounding areas. Additionally local student chapters are seeking speakers to give talks on professional and technical topics.

If you would like to speak on professional topics ranging from career development, time or project management, engineering experiences, and many more, or have specific technical topics and developments you would like to contribute, or even have some pet topics of your own, please contact the organizer below.

Additionally, the NNJ SAC is seeking volunteers to get involved at the section level to help organize local events for students and the GOLD membership in the NY-NJ Metro area. If you would like to help out even for short periods of time or maybe take on leading a committee in the section, please contact the organizer Amit Patel (a.j.patel@ieee.org) to find out more and come to a section business meeting.

North Jersey EXCOM Holiday Party Photos

Photos from the December 4th North Jersey Section Executive Committee Holiday Party can be found at

<http://www-ec.njit.edu/~ieeenj/NEWSLETTER.html>

Conference Rooms Needed!

The North Jersey Section (Education Committee) is looking for conference room facilities to hold their training seminars. The seminars are being held on one weeknight from 6:30 PM to 9:00 PM. In lieu of providing the conference facility for free, the organization can get free registration up to three members in the course/seminar. Please contact Bhanu Chivakula, Co-chair, Education Committee at b.chivakula@computer.org for suggestions or discussions, if interested.

IEEE North Jersey Section Activities January 2003

Jan. 8—"Unemployed Engineers" – NJ PACE, 6:30 – 8:30 PM, Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ. Richard F. Tax, (201) 664-6954 (rtax@bellatlantic.net), Paul Ward (973) 790-1625 (PWard1130@aol.com), Mike Rinaldi (973) 515-8195 (MikeRinald@aol.com).

Jan. 13—"Managing Emerging Technologies" – NJ EMS and Computer Chapters, 7:00 PM, Public Meeting Room, Morris County Library, 30 E. Hanover Ave, Whippany, NJ. Howard Leach (973) 540-1283 (h.leach@ieee.org).

Jan. 21—"Digital Audio Broadcasting" - NJ Communications Chapter, 4:30 PM, NJIT, 202 ECE Center, Newark, NJ. Dr. Hongya Ge, (973) 642-4990 (ge@njit.edu). Please check <http://web.njit.edu/~ieeenj/comm.html> for the latest updates.

Jan. 29-Apr. 2—"JAVA Programming" – North Jersey Section, Wednesday Evenings, 10 sessions, 6:30-9:00 PM, Ramada Inn Clifton, 265 Route 3 East, Clifton, NJ. Bhanu Chivakula (b.chivakula@computer.org).

Jan. 30—"Getting Started In Consulting" – NJ Consultants' Network, 7:30 PM, MCE/KDI Triangle, 60 S. Jefferson Rd, Whippany, NJ. Robert Walker (973) 728-0344 or www.TechnologyOnTap.org.

Upcoming Meetings

Feb. 5—"NJ Section Executive Committee Meeting" – 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Dr. Sanghoon Shin at (973) 492-1207 Ext. 22 or s.shin@ieee.org.

Feb. 12—"Cost Effective UHF Switched Filter with Constant Bandwidth" – EDS/C&S Chapters, 7:00PM (buffet at 6:15PM), NJIT, 202 ECE Center, Newark, NJ. Dr. Richard Snyder (973) 492-1207, Dr. Durga Misra (973) 596-5739 (dmisra@njit.edu), or Dr. Edip Niver (973) 596-3542.

Feb. 27—"Setting and Maximizing Price On Your Consulting Services" – NJ Consultants' Network, 7:30 PM, MCE/KDI Triangle, 60 S. Jefferson Rd, Whippany, NJ. Robert Walker (973) 728-0344 or www.TechnologyOnTap.org.

Mar. 11-Apr. 29—"Object-Oriented C# Design & Programming" – North Jersey Section, Tuesday Evenings, 8 sessions, 6:30-9:00 PM, Ramada Inn Clifton, 265 Route 3 East, Clifton, NJ. Bhanu Chivakula (b.chivakula@computer.org).

Mar. 12—"IEEE Sarnoff Symposium 2002 - Advances in Wired and Wireless Communications" – Time TBA, The College of New Jersey, Ewing, NJ. Dr. Gerhard Franz (609) 936-1919 (g.franz@ieee.org).

Mar. 15—2004 IEEE Fellow Nominations Due.

Mar. 20—"Integrated Electrical Assemblies" - NJ IAS/PES Chapters, 7:00PM, Eaton/Cutler Hammer, 690 Rahway Ave, Union, NJ. Ron Quade (973) 886-0275.

Apr. 25 & 26—"The 12th Annual Wireless and Optical Communications Conference", Time TBD, Wyndham Hotel, Newark, NJ. Dr. Hongya Ge, (973) 642-4990 (ge@njit.edu) or see <http://www.wocc.org> for additional details.

**Members and Non-Members Welcome
PLEASE POST**

NJ Consultants' Network:

Getting Started in Consulting

On Thursday evening, January 30th, IEEE Consultants' Network of Northern NJ will hold its monthly meeting, featuring a panel discussion titled "Getting Started in Consulting."

About the Talk

Due to downsizing and budget cuts, an increased number of companies are considering consultants to fulfill their needs, while at the same time many engineers look at independent contracting as an alternative career path. The discussion will explore issues facing prospective consultants, such as motivation and risks, logistics and organization of business, marketing and contracts.

About the Panelists

Some of CNNNJ's long-term members will offer their thoughts on operating a consulting business and share their personal experiences.

Laurie Cox is the President of RLC Designs, Inc. and has been consulting for more than 10 years. Laurie specializes in FPGA design of digital signal processing algorithms, and also provides software services in C/C++, VBasic and assembly languages for embedded designs and PC-based applications. She can be reached at (973) 663-5778, lcox@rlcdesigns.com.

Dr. Ira J. Pitel, President of Magna-Power Electronics, is responsible for contract R&D and manufacturing of his company's line of 3.3-750 kW DC power supplies. Ira holds many patents in the field of power electronics and is a Fellow of the IEEE. He can be reached at (973) 263-0017, i.pitel@ieee.org.

Peter Schutz of Schutz Engineering specializes in office, medical and laboratory equipment. Peter's area of expertise includes: mechanical components and systems, plastics, pneumatic and fluid systems, thermal design and analysis, packaging of electronics, enclosures, process control systems, CAD and prototypes. He can be reached at (908) 277-4100, shutze@compuserve.com.

Robert Walker of RD Walker Engineering has been offering analog and digital design services since 1987. Robert's expertise includes sensing, conditioning, control and telecommunication equipment, utilizing discrete design as well as embedded controllers and FPGA's. Contact: (973) 728-4500, robert@rdwalker.com.

About the Consultants' Network

The IEEE Consultants' Network of Northern NJ was founded in 1992 to

encourage and promote the use of independent technical consultants by business and industry.

All Welcome!

You do not have to be a member of the IEEE or of the Consultants' Network to attend. Admission is free.

Time: 7:30 PM, Thursday, January 30th, 2003.

Place: MCE/KDI Triangle, 60 S. Jefferson Rd, Whippany, NJ.

Information: For directions and up-to-date meeting status, call Robert Walker (973) 728-0344 or visit our website at www.TechnologyOnTap.org. To download a map to KDI, go to: <http://www.kditriangle.com/directions.htm>.

NJ EDS, C&S Chapters:

Cost Effective UHF Switched Filter with Constant Bandwidth

On February 12th, 2003, the IEEE NJ Section Electron Devices, and Circuits and Systems Chapters together with the New Jersey Institute of Technology will host a talk on "Switched Filter with Constant Bandwidth." The speaker will be Dr. Jim Benjamin of BAE Systems.

About the Talk

Dr. Benjamin will talk about a digitally tuned filter, tuning from 225 to 400 MHz, reconfigurable in step size and bandwidth, good intercept point.....a true state of the art device

As part of the design of a modern communications system, measures must be taken to mitigate the effects of other collocated systems. These systems may be of the same design and operate in common frequency bands. The physical separation between these collocated systems may be minimal. Operation under these conditions require both attention to the linearity of the RF system design (very high IP3 points) and the incorporation of adequate filtering.

In the military bands the frequency assignments can vary. Many of the radios have either of both LPI and A/J modes of operation. This leads to frequency-hopped radios, a situation not generally dealt with in the commercial world. The filters must, of necessity, be more complex and frequency agile. This agility can significantly increase the cost and complexity of a system.

In this talk I will address the design of a cost effective frequency agile filter. Several of these filters were implemented in a recent system. The filter contains two sections using ceramic resonators and lumped constant input/output/

interstage coupling. The coupling has been designed to minimize the bandwidth change with frequency. The filter is tuned with a capacitance decade switched using PIN diodes. The tuning range is almost an octave.

The choice of a switched filter as opposed to a voltage or veracter tuned filter allows the unit to operate under a modest level of power, a condition required for effective co-site mitigation.

In this talk we will discuss in basic details the design of the filter. The results of simulations performed and test results of fabricated filters. The reasons for the deviations from simulations and results will be highlighted.

About the Speaker

Dr. Jim Benjamin is a researcher at BAE Systems and previously was a professor at Marquette.

All Welcome!

You do not have to be a member of the IEEE to attend.

Time: 7:00 PM, Wednesday, February 12, 2003. Free buffet will be starting at 6:15 PM.

Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Directions are available at www.njit.edu.

Information: Dr. Richard Snyder (973) 492-1207 (RS Microwave), Dr. Durga Misra (973) 596-5739 (dmisra@njit.edu) or Dr. Edip Niver (973) 596-3542 (NJIT).

Resolve To Advance To Senior Member Grade In 2003

To become a Senior Member, you need ten years experience. A Bachelors Degree counts for three of those years and Master and Doctorate Degrees each count for one more year of experience. You don't have to be an IEEE member for ten years. In order to qualify for Fellow grade, you must be a Senior Member. The dues for Senior Members, Members and Associates are the same. New Senior Members will receive an engraved wood and bronze Senior Member plaque from the IEEE.

To get information and an application, contact Don Weinstein, Kulite Semiconductor, One Willow Tree Road, Leonia, NJ 07605-2239, (201) 461-0900 ext 234 mornings, FAX (201) 461-0990, email don@kulite.com. Please include your mailing address.

NJ Section PACE:

Unemployed Engineers

On Wednesday, January 8th, the North Jersey Section Professional Activities Committee will meet to discuss the unemployment situation for engineers and members of the engineering community. You do not have to be unemployed to attend. All jobs are being threatened.

About the Meeting

This meeting provides an opportunity to meet and discuss the unemployment situation. High on the IEEE-USA list of subjects is unemployment and the displacement of American citizens by foreign workers imported under the H-1B legislation. This year the legislation increased the number of H-1B workers to about 200,000 while citizens have been discarded and replaced by foreign workers. And, please do not confuse this as an "immigration" issue. This is all about money and wage busting.

We need input and views from the unemployed on this important issue. We will also like you to confirm your attendance via e-mail or telephone. When we reach a suitable attendance we will invite the press to give visibility to the employment situation here in New Jersey.

Our PACE meeting is open to discuss professional needs. PACE provides the opportunity to meet, address, discuss and perhaps improve the professional aspects of the engineering profession. We should take advantage of the opportunity to have a place and time to meet. Invite your associates to join us.

According to PACE Leaders "Employment Assistance and Career Development are high on their list of priorities." More on these projects can be found at www.ieeeusa.org

"Today's Immigrant - Tomorrow's Victim" see www.aea.org.

All Welcome!

You do not have to be a member of the IEEE to attend. Members of other professional societies and engineering disciplines are always welcome.

Time: 6:30 to 8:30 PM, Wednesday, January 8, 2003.

Place: Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ 07011 772-5500

Information/Registration: Richard F. Tax, (201) 664-6954 (rtax@bellatlantic.net), Paul Ward (973) 790-1625 (PWard1130@aol.com), Mike Rinaldi (973) 515-8195 (MikeRinaldi@aol.com).

NJ Consultants' Network:

Setting and Maximizing Price On Your Consulting Services

On Thursday evening, February 27, 2003, IEEE Consultants' Network of Northern NJ will hold a panel discussion and presentation on "Setting and Maximizing Price On Your Consulting Services." Our expert members of the Northern NJ Consultants' Network, with many years of consulting experience will unlock the secrets of how you should set your price and how you can maximize it.

About the Talk

By popular demand, we are bringing this hot topic once again to bring you up to date on the latest information. The most prevalent dilemma among independent technology consultants, both novices and veteran consultants alike, is deciding how much to charge their next client for their services. Putting a price tag on yourself can be a daunting and uncertain process. Too high a price, and you lose a contract. Too low a price and you are giving up the money that you deserve. A panel of consultants from the Northern NJ Consultants' Network will discuss the various methods that they have used in their practices. Among the topics to be covered:

- ❑ Data and charts for range of prices charged by various specialties
- ❑ Flat fee pricing vs. Time & Materials pricing
- ❑ The Contract Engineer vs. the Expert Consultant
- ❑ Street Smarts in Price Determination
- ❑ Maximizing the Price and Profit
- ❑ Negotiation Factor: To Haggle or Not to Haggle

About the Consultants' Network

The IEEE Consultants' Network of Northern NJ was founded in 1992 to encourage and promote the use of independent technical consultants by business and industry.

All Welcome!

You do not have to be a member of the IEEE or of the Consultants' Network to attend. Networking after the meeting is encouraged. There is no charge for admission. Bring your friends.

Time: 7:30 PM, Thursday, February 27, 2003.

Place: MCE/KDI Triangle, 60 S. Jefferson Rd, Whippany, NJ. (Entrance at rear)

Information: For directions and up-to-date meeting status, call Robert Walker (973) 728-0344 or visit our website at www.TechnologyOnTap.org. To download a map to MCE/KDI, go to: <http://www.kditriangle.com/directions.htm>.

E-Week 2003 Kits Now Available

WASHINGTON (27 November 2002) - Planning kits for National Engineers Week 2003 (16-22 February) are now available from IEEE-USA and the E-Week Website.

The kit will guide you on conducting E-Week activities in your area. It includes 50 ways you can participate in E-Week, a planning calendar, publicity program, E-Week poster and a product catalog and order form.

The Discover "E" program provides information for engineers who visit classrooms to help improve student interest in science, technology, engineering and mathematics. Information is also included on Introduce a Girl to Engineering Day and the Future City Competition, which IEEE-USA introduced to National Engineers Week in 1993.

To request your kit, contact Helen Hall at 202-785-0017, ext. 8354 or h.hall@ieee.org. You can also get one by visiting <https://shop.eweek.org/eweek/> and clicking "Promotional Materials."

Accessing IEEE Technical Information - Free Web Conference Coming in February

The IEEE will host a live Web Conference, "Accessing IEEE Technical Information: The IEEE Member Digital Library" on 11 February 2003 at 10:30AM EST, from the International Solid-State Circuits Conference in San Francisco, CA, USA. As Internet attendance is limited, IEEE sections and chapters are encouraged to invite members to central locations to view the Web Conference to allow as many members to view the presentation as possible.

IEEE members and others interested in viewing the free web conference can register at <http://www.ieee.org/ieeemdl>.

For more information on the Web Conference, please contact Barbara Soifer, IEEE Sales & Marketing, at b.soifer@ieee.org or IEEE Member Services at mdlhelp@ieee.org.

IEEE-USA President Describes Threats Facing US Engineers at Summit on the US Science and Engineering Workforce

WASHINGTON (2 December 2002) - IEEE-USA President LeEarl Bryant pointed to recent sharp increases in engineering unemployment and declining real wages as serious threats to the long-term viability of US engineering careers at the National Academies' Pan Organizational Summit on the US Science and Engineering Workforce last month.

Bryant expressed serious concerns about the potentially adverse, long-term effects of workforce utilization practices that are making engineering jobs less secure and engineering careers more tenuous than ever. She cited the increasing reliance by employers on temporary foreign workers, non-standard employment arrangements and outsourcing of engineering work to lower cost, offshore locations. Non-standard employment arrangements utilize contingent, part-time, or contract workers instead of regular, full-time employees to reduce labor costs and facilitate just-in-time delivery of high value-added products and services, Bryant explained.

Unfortunately, management's short-term emphasis on labor flexibility seems to be creating long-term disincentives to continuing participation by many of the nation's best and brightest in America's engineering enterprise, the IEEE-USA president said.

Many aspiring and experienced engineers, when confronted with the prospect of periodic unemployment and flat or declining real wages, are voting with their feet and opting for careers in fields that offer more long-term job security and higher real wages - fields such as business administration, law and medicine.

Other important issues highlighted by the IEEE-USA president included the need to: provide timely information on engineering labor market conditions; strengthen math and science education in grades K-12; expand engineering educational and employment opportunities for women, minorities, handicapped and older Americans; improve lifelong learning (continuing education) for practicing engineers and scientists; and reform the nation's educational and employment-based immigration system.

For the entire work, go to

<http://www.ieeeusa.org/forum/POLICY/12nov02.pdf>.

The 11-12 November invitational meeting was hosted by the National Academies' Government-University-Industry Research Roundtable (GUIRR) and attended by representatives from more than 40 national organizations, including business associations, educational institutions, government agencies and professional societies. Its purpose was to enable stakeholders to identify causes and recommend solutions to problems affecting supply and demand for US scientists and engineers. For more information on GUIRR, go to <http://www7.nationalacademies.org/guirr/>.

2004 IEEE Fellow Nominations

Deadline: 15 March 2003

Recognizing the achievements of its members is an important part of the mission of the IEEE. The IEEE grade of Fellow is conferred upon a person of "outstanding and extraordinary qualifications and experience in IEEE designated fields, and who has made important individual contributions to one or more of these fields." The total number of Fellows selected each year does not exceed 0.1% of the total IEEE membership.

Any person, including nonmembers, is eligible to serve as a nominator with the following exceptions: members of the IEEE Board of Directors, members of the IEEE Fellow Committee, IEEE Technical Society/Council Fellow Evaluating Committee Chairs, members of IEEE Technical Society/Council Evaluating Committees reviewing the nomination, or IEEE staff. The deadline for nominations is 15 March 2003.

The candidate must be an IEEE Senior Member at the time the nomination is submitted, and he/she must have completed 5 years of service in any grade of IEEE membership.

All the necessary material to assist you in the nomination process is available on the IEEE Web site: <http://www.ieee.org/about/awards/fellows/fellows.htm>. If you prefer a hard copy, please send an e-mail to fellow-kit@ieee.org. Include your name, street address, city, state/province, postal code, country, and telephone/fax numbers.

PES/IAS:

Integrated Electrical Assemblies

On March 20th, 2003, the Power Engineering and Industrial Applications Chapters will sponsor a technical meeting on "Integrated Electrical Assemblies." The speaker will be Mr. Wayne Celeste.

About the Talk

Current trends in the electrical equipment design arena require that engineers fit more electrical distribution and control equipment into a smaller available space. Whether the project is a new construction retail store, or an electrical upgrade to an existing water treatment plant, the need for additional floor space is critical.

This speaker will explore several methods of consolidating electrical distribution equipment into one, space-saving assembly. Topics will include Integrated UL 891 switchboards, UL 845 Motor Control Centers, and small unit substation designs. In addition to floor space savings, the speaker will discuss additional advantages these designs offer, such as reduction in installed cost and time to project completion.

About the Speaker

Mr. Wayne Celeste is a District Application Engineer at Cutler-Hammer.

Time: 7:00 PM, Thursday, March 20, 2003.

Place: Eaton/Cutler Hammer, 690 Rahway Ave, Union, NJ. Directions: Route 82 Morris Avenue from either Springfield or Union to Rahway Ave.

Information: Ron Quade (973) 886-0275.

IEEE North Jersey Section Seminar

OBJECT-ORIENTED C# DESIGN & PROGRAMMING

Tuesday Evenings, March 11, 2003 through April 29, 2003, Eight weekly classes

(March 11, 18, 25, April 1, 8, 15, 22 and 29) from 6:30 PM to 9:00 PM

Ramada Inn Clifton, 265 Route 3 East, Clifton, NJ 07014

(Checks should not be mailed to this address)

ABSTRACT

Microsoft has created a new programming language, C# (Sea Sharp) as part of its new .NET development environment. Although MS still supports Visual basic and C++ (and maybe Java), clearly C# is its language of choice for Windows and Internet usage, and will be its best-supported language. C# is an Object-Oriented language of course. It is more powerful than VB but still allows simple programs to be created in the VB drag-and-drop tradition. It is simpler than C++ but still allows complicated programs with more obvious code.

This course covers the C# language itself, the sizeable libraries that support it, the ability to create screen images (for console or internet) and use of the MS Visual .NET development suite. This course begins with the environment and motivation for C# and mechanics of the language. It then describes C#'s ways to declare classes and use objects of those classes. Special facilities for creating Windows, or internet, programs are treated. A downloadable command line compiler can be used, however, the elegant visual .NET development suite is also described.

Finally several C# software engineering capabilities to enhance development efficiency and reliability are covered. Design is covered using UML. The course has a practical, "how-to-do-it" approach.

TARGET AUDIENCE

This is not a course in how to program computers. It is intended to extend the capabilities of those who are already programmers so a familiarity with foundation programming concepts will be very helpful. But O-O programming is still programming so the course will cover concepts, implementation and practical aspects of using C#.

COURSE TOPICS

1. What is the programming environment today: What is C#, why did Microsoft create it and where do they expect it to go.
2. C# classes and object instantiation: Fields and constructor and other methods, visibility, how classes encapsulate the real world and its characteristics.
3. Characteristics of code within methods: names, data types, operators and keywords, expressions and statements, control mechanisms for branching and looping, how everything is a class, value and reference types, boxing.
4. Mechanics of program creation: compilers, emulators, jit, formatting, layout, debugging, and testing, documentation and comments, O-O design, UML, development tools.
5. Anatomy of a console C# program: main, elementary input and output, static members.
6. Inheritance and derived classes: use of library classes, some special classes such as string, namespaces and using, other object interaction.
7. Deeper into classes and objects: delegates, properties, overloading methods, Interfaces, for each, containers and enumerators.
8. The concept of Windows programs: events and handlers, use of the mouse, the large Forms library, commonality between console and internet, examples of windows programs.
9. Engineering issues, garbage collection, unmanaged code, attributes, finalize, threads, ref and out, file I/O, efficiency and real-time.
10. Other actors in the game: XML, COM+, SOAP, ADO, Regex.

Class size will be limited to a maximum of 25. Early registration is recommended. The members are required to pre-register by calling Mr. Bhanu Chivakula on (732) 718-3818. Registration and checks are accepted only after pre-registration.

WHERE:	Ramada Inn Clifton, 265 Route 3 East, Clifton, NJ. (Checks should not be mailed to this address)
WHEN:	8 Sessions, Tuesdays on March 11, 18, 25, April 1, 8, 15, 22 and 29; Time: 6:30-9:00 PM
COST:	With textbook or notes: IEEE (& affiliate) members \$300; Non-IEEE members \$400.
CONTACT:	Bhanu Chivakula - email b.chivakula@computer.org.

REGISTRATION: OBJECT-ORIENTED C# DESIGN & PROGRAMMING

Please send checks with this form to Bhanu Chivakula, 19 Prestwick Way, Edison, NJ 08820. Include the sender's address and mark the envelope "OBJECT-ORIENTED C#."

(Checks payable to "North Jersey Section IEEE" with registration form should be mailed to this address)

Direct inquiries via email to B.Chivakula@computer.org.

Name: / Mr. / Mrs. / Miss / Ms. / _____

Non-member ✉ email address ✉
 IEEE Member Member #: _____ Member of _____ technical society

Employer: _____

Employer Address: _____

Home Address: _____

Business (day) telephone #: _____ Home telephone #: _____

Please enclose required fee payable to: North Jersey Section IEEE.

Registration status will be mailed after March 4, 2003. In general, the effective date of the application corresponds to the date when BOTH a fully completed application/registration and payment are received.

Tuition receipt will be mailed only if this box is checked

Signature: _____

IEEE North Jersey Section Seminar

JAVA PROGRAMMING

*Wednesday Evenings, January 29, 2003 through April 2, 2003, Ten weekly classes
(Jan. 29, Feb. 5, 12, 19, 26, March 5, 12, 19, 26 and April 2) from 6:30 PM to 9:00 PM
Ramada Inn Clifton, 265 Route 3 East, Clifton, NJ 07014
(Checks should not be mailed to this address)*

The North Jersey Section IEEE is offering an evening seminar/course entitled "Java Programming." This course, however, will be for anyone even if he/she has never taken a programming course. The instructor will provide the necessary software (compiler and editor) for everyone to get started immediately from ground zero! More assignments and handouts are planned this time.

Instructor: Dr. Donald Hsu, PhD, has been a corporate manager for 11 years and is an experienced trainer. Since 1997, he has trained 150+ people in Java Programming and Advanced Java Programming courses in five organizations.

TOPICS

Explain the dynamic growth in Java Programming, contrast the importance of AWT, CGI, JavaScript and HTML, classify the different types of Java applets vs Java applications, identify the control structures, arrays and classes, construct character strings and graphics tools, define multithreading, files and streams, draw multimedia, animation and swing images, build audio files, JavaBeans and networking applications, distinguish Java utilities, error handling, serialization and reflection and analyze real-world projects using SDK 1.3 development tools.

Class size will be limited to a maximum of 25. Early registration is recommended. The members are required to pre-register by calling Mr. Bhanu Chivakula on (732) 718-3818. Registration and checks are accepted only after pre-registration.

WHERE: Ramada Inn Clifton, 265 Route 3 East, Clifton, NJ. (Checks should not be mailed to this address)
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CONTACT: Bhanu Chivakula - email b.chivakula@computer.org.

REGISTRATION: Java Programming

Please send checks with this form to Bhanu Chivakula, 19 Prestwick Way, Edison, NJ 08820. Include the sender's address and mark the envelope "Java Programming."

**(Checks payable to "North Jersey Section IEEE" with registration form should be mailed to this address)
Direct inquiries via email to B.Chivakula@computer.org.**

Name: / Mr. / Mrs. / Miss / Ms. / _____

Non-member _____ IEEE Member Member #: _____ Member of _____ technical society

email address: _____

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Employer Address: _____

Home Address: _____

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Please enclose required fee payable to: North Jersey Section IEEE.

Registration status will be mailed after January 10, 2003 In general, the effective date of the application corresponds to the date when BOTH a fully completed application/registration and payment are received.

Tuition receipt will be mailed only if this box is checked Signature: _____