The IEEE Newsletter

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

NJ Computer Chapter:

XML and Business Process Management

On Wednesday, October 29th, 2003, the IEEE North Jersey Section Computer Chapter will host a presentation on "XML and Business Process Management" by Arthur Hedge III.

About the Talk

During the height of the dot-com boom, the hype was that "XML is going to save the world!" However, this hasn't happened. One problem is that XML is only a language and, just like the English language, the same meaning can be conveyed in many different ways. Until each interchange uses a specific format agreed upon by all participating parties, the implementation of XML will be difficult. One way to overcome this difficulty is for organizations to use specific sets of standards for the implementation of XML in a given business or industry, an approach that has led to some great successes. Currently, there are a number of standards in place for using XML in Business Process Management, and there is the potential for the development of additional standards.

For companies looking to implement Business Process Management solutions for their business processes, XML can be used in three areas: intra-company communications, inter-company communications, and Business Process Definition. These three areas have different maturity levels and considerations involved in using XML, and this talk will provide in-depth coverage of these areas, their maturity levels with respect to using XML, and the factors that need to be taken into consideration when using XML for Business Process Management. The successful use of XML for Business Process Management is vital to the business-to-business community, and our speaker will provide coverage of this and other issues in what will be an enlightening presentation.

About the Speaker

Arthur J. Hedge III is President of Castle Ventures. He focuses on helping companies reduce costs and operate more effectively by improving their business processes. Mr. Hedge has over 20 years of consulting expertise, focused on large-scale application development. He is also a member of the AIIM Document Management standards committee. Mr. Hedge is a graduate of the Massachusetts Institute of Technology.

All Welcome!

You do not have to be a member of the IEEE to attend. Bring your friends and network during the free pre-meeting buffet starting at 6:00 PM.

Time: 7:00 PM, Wednesday, October 29, 2003. Pre-meeting buffet starting at 6:00 PM.
Place: Public Meeting Room, Morris County Library, 30 E. Hanover Ave, Whippany, NJ, (973) 285-6930.
Information: Seth Jakel (973) 731-1902, sgjakel@comcast.net or Vivek Shaiva (908) 229-6125, vshaiva@computer.org.

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.

Proposed Slate of Officers for the 2004 IEEE North Jersey Section

Below is the list of proposed officers for the 2004 IEEE North Jersey Section as presented by the IEEE North Jersey Section Nominating Committee. If a North Jersey Section IEEE member in good standing would like to run for an office, please contact Keith Saracinello at k.saracinello@ieee.org or (908) 791-4067 for details.

Chair:	Dr. Durga Misra
1st Vice-Chair:	Har Dayal
2nd Vice-Chair:	Bhanu Chivakula
Treasurer:	Dr. Edward Byrne
Secretary:	Dr. Sanghoon Shin
Members-at-Large:	Dr. Nirwan Ansari Naz Simonelli Dr. Richard Snyder

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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://web.njit.edu/~ieeenj/
IEEE NJ SECTION NEWSLETTER HOME PAGE
http://web.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.

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 Section PACE:

Engineers Meet: Current Activities: NJ Legislative Action, Seminar Reviews

On Wednesday, October 8, the North Jersey Section Professional Activities Committee will meet to discuss Legislative Action involving the Off-Shoring of NJ State jobs, Roll Back H-1B Numbers, a Washington trip report and Jersey Coast PACE seminar about Survival in a Competitive Environment.

The NJ State Senate and the Assembly will consider A2425. Our discussion will involve PACE legislative activities for September.

You do not have to be unemployed to attend. All jobs are being threatened. You are encouraged to attend and bring your spouse and associates.

About the Meeting

This meeting provides an opportunity to meet and discuss action items relating to the unemployment situation. High on the IEEE-USA list of subjects is unemployment and the displacement of American citizens by sending jobs offshore and importing foreign workers under the H-1B and L1 legislation.

This year one IEEE-USA goal is to roll the H-1B number back to 65,000 from 195,000. And, please do not confuse this as an "immigration" issue. This is all about money and wage busting.

Reports: Marcus Muncy will report about a seminar he attended at the Leadership Institute's Legislative Project Management School in August at the Leadership Institute in Arlington, VA. The seminar covers how to turn legislative agenda into law, techniques dealing with the media, to working with lobbying organizations, collaborating with Hill offices, etc. Marcus is a member of the American Engineering Association, (AEA) and the IEEE North Jersey Section. AEA covered the funding.

Survival in a Competitive Environment: Five Section Members were sent to the Jersey Coast Section's PACE seminar "Survival in a Competitive Environment." A critique will be provided by those attending. This should help with some interesting information. Funding was covered by the North Jersey Section.

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. Bring engineers and students from the other engineering disciplines.

According to IEEE-USA leaders "Employment Assistance and Career Development are important" and they request your help. More on these projects can be found at www.ieeeusa.org

All Welcome!

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

Time: 6:30 to 8:30 PM, Wednesday, October 8, 2003.
Place: Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ, (973) 772-5500.
Information: Paul Ward, (973) 790-1625. PWard1130@aol.com, Richard F. Tax, (201) 664-6954, rtax@bellatlantic.net.

NJ Signal Processing Chapter:

Tutorial/Seminar: Perceptual Coding of Audio & The Science of Audio in 2003

On October 7, 2003, the IEEE North Jersey Section Signal Processing Society Chapter will host a tutorial on "Perceptual Coding of Audio" along with a seminar on "The Science of Audio in 2003." The speaker will be Distinguished Lecturer James D. (JJ) Johnston of Microsoft.

About the Talk

Perceptual Coding of Audio, A tutorial

"Perceptual Coding of Audio – A Tutorial" is a 3 hour tutorial on the methods behind perceptual audio coding. Perceptual audio coding is the method used in MP3, MPEG-2 AAC, computer audio distribution, movie audio codecs, DVD movie audio, and digital audio radio methods to reduce the bit rate of a PCM audio signal to something that the channel, storage methods, and/or media can support.

Perceptual audio coding is the use of knowledge of the destination (the human auditory system) in order to discard irrelevant parts of a digital audio signal. Most such coders also support substantial redundancy (source modeling) for additional coding gain.

The talk will cover basic coding methods, basics of the human auditory system relevant to coding, perceptual masking models, rate loops, noiseless compression methods, and stereo and multichannel coding at a tutorial level. The talk will be in 3 parts, with a break approximately once per hour, followed by a question and answer session while space is and discussion are available.

The Science of Audio in 2003, A Seminar

This talk is a low-level talk on the state of audio capture and reproduction at

present. Some basics of acoustics, the human auditory system, and transmission and coding methods will be mentioned in order to show where we stand in terms of audio reproduction, and in what way we may move to improve the audio experience. Multichannel audio, stereo audio, and the ability of the auditory system to pick up cues from an acoustic space or the audio reproduction chain will be the main topics covered.

About the Speaker

James D. Johnston is currently employed at Microsoft Corporation. He is retired from AT&T Labs - Research, quartered at Florham Park, NJ, Speech Processing Software and Technology Research Department.

In 1997, JJ was elected a Fellow of the Audio Engineering Society for his work on perceptual coding of audio. He became a Senior Member of the IEEE, and received an AT&T Technology Medal and AT&T Standards Award in 1998. In February 2001, he received a New Jersey Inventor of the Year award for his contributions to MP3 and audio coding in general. He was elected a Fellow of the IEEE in 2002. He received his BSEE and MSEE from Carnegie-Mellon University, with side interests in mathematics, radio broadcasting and coherent image signal processing.

Time: Tutorial 1:00 PM - 4:00 PM, Seminar 4:45 PM – 5:45 PM, Tuesday, October 7, 2003.
Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Directions are available at www.njit.edu.
Information: Dr. Yun Shi (973) 596-3501 (shi@njit.edu), Dr. Alfredo Tan (201) 692-2347 (tan@mailbox.fdu.edu), Dr. Hong Man (201) 216-5038 (hman@stevens-tech.edu).

IEEE North Jersey Section Activities October 2003

Oct. 1 – "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.

Oct. 2 – "2003 MTT/AP Symposium and Mini-Show" – MTT-S/AP-S Chapter, 9:15 AM - 5:30 PM, Radisson Hotel Fairfield, 690 Route 46 East, Fairfield, NJ. Kirit Dixit (201) 400-2313, Willie Schmidt (973) 492-0371, Har Dayal (973) 633-4618, or George Kannell (973) 386-4170.

Oct. 7 – "The Evolution of Radar Transmit-Receive (T-R) Modules as Related to Defense & Commercial Applications" – EDS, C&S, MTT/AP 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.

Oct. 7 – "Tutorial/Seminar: Perceptual Coding of Audio & The Science of Audio in 2003" - NJ Signal Processing Chapter, Tutorial 1:00 PM - 4:00 PM, Seminar 4:45 PM – 5:45 PM, NJIT, 202 ECE Center, Newark, NJ. Dr. Yun Shi (973) 596-3501 (shi@njit.edu), Dr. Alfredo Tan (201) 692-2347 (tan@mailbox.fdu.edu), Dr. Hong Man (201) 216-5038 (hman@stevens-tech.edu).

Oct. 8 – "Engineers Meet: Current Activities: NJ Legislative Action, Seminar Reviews" - NJ PACE, 6:30 – 8:30 PM, Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ. Paul Ward (973) 790-1625 (PWard1130@aol.com) or Richard F. Tax (201) 664-6954 (rtax@bellatlantic.net).

Oct. 15 – "Garden State IMAPS Fall Packaging Symposium" – 1:00 - 7:00 PM, Lucent Technologies, Bell Laboratories, Murray Hill, NJ. Sean Adams (908) 771-1547 (sean.adams@us.gases.boc.com).

Oct. 17-18 – "Call for Participation - Consortium for Computing Sciences in College - Eastern Region - Nineteenth Annual Conference" - Montclair State University, Upper Montclair, NJ. For further information see http://www.csam.montclair.edu/~deremer/CCSCE2003Call.pdf or http://www.ccsc.org.

Oct. 23 - "The Art of Cold-Calling – What You Need to Know" - NJ Consultants' Network, 7:30 PM, MCE/KDI Triangle, 60 S. Jefferson Rd, Whippany, NJ. Robert Walker (973) 728-0344 or www.TechnologyOnTap.org.

Oct. 24 – "Power Systems Grounding Technical Seminar" - Sponsored by the NJ IAS/PES Chapters, 9:00 AM to 3:00 PM, JCP&L, 300 Madison Avenue, Punchbowl Room, Morristown, NJ. Contact Ronald W. Quade at (212) 833-0268 or RonaldWQuade@eaton.com.

Oct. 27 – "Secret Key and Steganalysis Capacity Estimation in Digital Data Hiding" - NJ Signal Processing Chapter, 4:45 PM (refreshments at 4:30 PM), NJIT, 202 ECE Center, Newark, NJ. Dr. Yun Shi (973) 596-3501 (shi@njit.edu), Dr. Alfredo Tan (201) 692-2347 (tan@mailbox.fdu.edu), Dr. Hong Man (201) 216-5038 (hman@stevens-tech.edu).

Oct. 29 – "XML and Business Process Management" - NJ Computer Chapter, 7:00 PM, Public Meeting Room, Morris County Library, 30 E. Hanover Ave, Whippany, NJ. Seth Jakel (973) 731-1902, sgjakel@comcast.net or Vivek Shaiva (908) 229-6125, vshaiva@computer.org.

Upcoming Meetings

Nov. 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.

Nov. 18-Jan. 20 – "Object-Oriented C# Design & Programming" - North Jersey Section, Tuesday Evenings, 8 sessions, 6:30-9:00 PM, Wessley Inns & Suites, 265 Route 3 East, Clifton, NJ. Bhanu Chivakula (b.chivakula@computer.org).

Jan. 5-8 – "2004 IEEE Consumer Communications and Networking Conference - Consumer Networking: Closing the Digital Divide" - Caesars Palace, Las Vegas, Nevada. See http://www.ccnc2004.org/ for more details.

Members and Non-Members Welcome

PLEASE POST

NJ Consultants' Network:

The Art of Cold-Calling – What You Need to Know

The October 23rd meeting of the IEEE Consultants' Network of Northern NJ will feature Dr. Aron Kain, who will present and discuss "The Art of Cold-Calling—What You Need To Know." Dr. Kain will provide insights and practical how-to's for every consultant's nightmare: trying to win business, without having an "in" with the potential client.

About the Talk

In building a consulting practice, we all face the daunting task of drumming up business from people and corporations with whom we have had no previous contact. If we come off as salespeople, we don't get past the front door, but if we manage to get past the "gatekeeper," then what do we do? Many fledgling consulting businesses die on the vine because the principals are afraid to tackle this non-trivial task. What to do?

Dr. Kain will provide insight into the cold calling process, expectations of the client as well as what the consultant should be looking for. Some practical examples will be used to illustrate the point.

But: be warned!!! There is no magic bullet—the tools and insights will be provided - the consultant must do the work!

About the Speaker

Dr. Aron Kain has over 18 years hands-on in-depth experience in numerous engineering disciplines from RF/ Microwave/wireless to superconducting electronics, to MEMS design, to robotics and thin/thick film process development. In the corporate world he has risen from member of technical staff to Director of Engineering as well as Director of Advanced Technology. He started his successful consulting business BHTechnology two years ago and has such esteemed clients as TRW, BAE Systems, Medtronic, and Leviton Voice and Data to name a few. His company, at www.bhtechnologyllc.com, provides engineering design and prototyping services, as well as engineering management and technology due diligence services to the financial industries.

About the Consultants' Network

Founded in 1992, the IEEE Consultants Network of Northern NJ encourages and promotes 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, October 23, 2003.
Place: MCE/KDI Triangle, 60 S. Jefferson Rd, Whippany, NJ. (Entrance at rear of building)
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.mcekdi-integrated.com/directions.htm.

NJ Signal Processing Chapter:

Secret Key and Steganalysis Capacity Estimation in Digital Data Hiding

On October 27, 2003, the IEEE North Jersey Section Signal Processing Society Chapter will host a presentation on "Secret Key and Steganalysis Capacity Estimation in Digital Data Hiding." The speaker will be Professor R. Chandramouli.

About the Talk

One application of digital data hiding is covert communications. Here, a secret message is embedded into a host message using a secret key such that its very existence is concealed. This type of embedding goes by the name of "steganography." Steganalysis is the process of discovering the presence of secret messages in digital media.

This talk consists of two parts: (a) a technique to estimate the secret key used in data embedding and (b) definition of a new capacity metric that measures the maximum number of secret message symbols that can be hidden such that discovering its existence is "hard." The secret key estimation algorithm and its analyses employ ideas from abrupt jump detection in stochastic processes. When applied to image steganography, issues such as statistical non-stationarity must be dealt with. We present few ideas to circumvent some of these problems. A software demo will also be given to demonstrate these techniques. Traditional embedding capacity metrics are information theory based. We first argue why these metrics are not suitable for steganography and then provide a new mathematical framework for capacity estimation that incorporates both stego embedding and steganalysis.

About the Speaker

Dr. Chandramouli is currently an Assistant Professor in the Department of ECE at Stevens Institute of Technology. His research includes low power wireless networking and security, steganography and steganalysis, and low power VLSI with support from the National Science Foundation, Air Force Research Laboratory, Stevens Wireless Security Center, and NJ Center for Wireless Telecommunications among others. He is a recipient of the NSF CAREER and IEEE Richard E. Merwin Awards. He also serves as an Associate Editor for the IEEE Transactions on Circuits and Systems for Video Technology since 2000.

Time: 4:45 PM (refreshments start at 4:30 PM), Monday, October 27, 2003.
Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Directions are available at www.njit.edu.
Information: Dr. Yun Shi (973) 596-3501 (shi@njit.edu), Dr. Alfredo Tan (201) 692-2347 (tan@mailbox.fdu.edu), Dr. Hong Man (201) 216-5038 (hman@stevens-tech.edu).

500,000 US IT Jobs Projected to Move Overseas by Year-end 2004; IEEE-USA Sees Continued Loss in US Economic Competitive-ness, National Security

WASHINGTON (21 July 2003) — One-half million jobs, or 10 percent of the US information technology (IT) professionals currently working in IT services firms, will be displaced in the next 18 months as their jobs move overseas, according to Gartner, Inc., the Stamford, Conn.-based research firm. The Gartner projection, in a 15 July research note by Diane Morello, would bring total IT job losses to one million, when added to the 500,000 IT professionals estimated by the Bureau of Labor Statistics to have lost their jobs in the United States since 2001.

In addition, Gartner urged business executives not to "trivialize" the impact of offshore outsourcing on their businesses and employees, stating that executives should pay attention to the loss of future talent and intellectual assets, as well as the potential negative impact of outsourcing on organizational performance.

Commenting on the projection of US IT job losses, IEEE-USA President-Elect John Steadman said: "In the rush to cut costs through offshore outsourcing and increased use of guest workers, companies are undermining the US IT profession and are increasing the

vulnerability of their core competencies and knowledge base."

Dr. Steadman, who will become IEEE-USA's president in 2004, added: "The emphasis on outsourcing to cut costs may help boost quarterly earnings, but it is also putting our nation's long-term economic competitiveness and national security at risk as we give up our technology edge for short-term profits."

IEEE-USA leaders are also concerned about increased industry reliance on non-immigrant high-tech guest workers resulting in more offshore outsourcing.

According to IEEE-USA R&D Policy Committee chair Ron Hira, "Many high-tech guest workers are brought here specifically to facilitate offshore outsourcing arrangements." Dr. Hira added: "Other guest workers are taking the acquired knowledge of US technology and business practices home with them, combining that know-how with low labor costs to help foreign businesses compete more effectively with US companies."

For more information, go to http://www.ieeeusa.org.

Contact: Pender M. McCarter, APR, Fellow PRSA, Communications/PR Director
Phone: (202) 785-0017, ext. 8353
E-Mail: p.mccarter@ieee.org

NJ EDS, C&S, MTT/AP Chapters:

The Evolution of Radar Transmit-Receive (T-R) Modules as Related to Defense & Commercial Applications

On October 7th, 2003, the IEEE NJ Section Electron Devices, Circuits and Systems and MTT/S/AP-S Chapters together with the New Jersey Institute of Technology will host a talk on "The Evolution of Radar Transmit-Receive (T-R) Modules as Related to Defense & Commercial Applications." The speaker will be Dr. Larry Whicker.

About the Talk

During the past several years much effort has gone in to developing advance Airborne Radar Systems. Solid-state Microwave devices and circuits have been designed and optimized for active arrays. This effort has been done to improve the performance and life time reliability of systems. Supporting technology programs have been established to compliment system programs. This presentation discusses the accomplishments of these technology programs.

Active phased array antennas utilize individually packaged Transmit-Receive (T-R) modules which provide both transmitter and receiver functions on half wavelength centers. Such modules may contain from 2 to 9 individual GaAs circuits which provides the following functions:

- Transmit amplifier
- Phase Shifter
- Variable attenuator
- T/R switch
- Low noise amplifier

The presentation begins by explaining the requirements for conventional radar systems and explains the needs/benefits of active arrays. The airborne fire control radar is highlighted. Technology programs which have funded industry/university teams are reviewed (MTSSMS, RF-WSI, MIMIC, HDMP, MAFET). The focus of each program are addressed. Some of the areas include:

- CAD for GaAs power and low noise devices
- Circuit architecture - number of circuits/chips
- Interconnect technology - wire bonds - batch techniques (LTCC, MHDI, MEMS)
- Thermal considerations

After discussing the evolution of an X-band T-R Module with a detailed discussion of the present state of the art, the emphasis shifts to present research trends and future applications. A number of recent programs have addressed fabricating multiple T-R modules in a single package are described. The "brick" versus "tile" configurations are compared. It is pointed out that previous and present efforts are achieving the tools required for today's wireless and for millimeter wave applications. Much present industry and university effort is in the packaging area where MHDI, LTCC, and MEMS are not only being used for 3D-interconnects but also are being used to achieve high performance components.

About the Speaker

Larry Whicker obtained BS and MS degrees in Electrical Engineering at the University of Tennessee, and the PhD at Purdue University with a major in Electrical Engineering with minors in math and physics. He is a member of Eta Kappa Nu, Tau Beta Phi, and Phi Kappa Phi. While at Purdue University, he was a Ford Foundation Fellow.

From 1964-1970 Dr. Whicker was Manager of Microwave Physics at the Westinghouse Aerospace Division in Baltimore, MD. Work here consisted of the development of ferrite control components and microwave integrated circuits. In 1970 he became head of the Microwave Technology Branch at the Naval Research Laboratory in Washington, DC. The position required the direction of 13 PhD researchers and their staff (four Sections). Areas of research include: superconductivity, monolithic integrated circuits, surface acoustic waves, and microwave control components. In 1984 he rejoined the Westinghouse Company as manager of GaAs Technology. In 1987 he became Manager of GaAs Programs. He managed important programs including: GaAs Man-Tech Industry Consortium, RF (GaAs) Wafer Scale Integration, MAFET, and HDMP.

In December 1995 Dr. Whicker retired from industry. Since then he has been serving as President of LRW Associates. Activities include consulting to DOD laboratories, acting as Administrator for the IEEE - MTT Society's Technical Committees, and assisting in the organization and management of the IEEE MTT and RFIC Symposiums. He is also an Adjunct Professor at the University of North-Carolina-Charlotte where he teaches undergraduate courses in Electrical Engineering and directs microwave research at the graduate level.

Dr. Whicker has over 100 technical Publications in Ferrite Control Components and in Active Array Technology. He is Editor of two Books on Ferrite Control Components. In 2000 he contributed a Chapter to a Book entitled "Analysis and Design Consideration for Monolithic Circuit Transmit-Receive (T-R) Modules. (Edited by K.C. Gupta and P.S. Hall).

Dr. Whicker professional activities include serving as President of the MTT-Society, Chairing the IEEE TAB Periodicals Committee, IEEE TAB Meetings Committee, and serving as General Chair of the 1980 MTT-Symposium. He was made a Fellow of the IEEE in 1980. He received the IEEE Centennial Medal. In 1990 he received the "Aviation Week" LAURELS Award for RF-Wafer Scale Integration. He became a Life-Fellow of the IEEE in 2000.

All Welcome!

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

Time: 7:00 PM, Tuesday, October 7, 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 http://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).

THE INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS, INC.

IEEE NORTH JERSEY SECTION

MTT-Society and AP-Society Joint Chapter

PRESENT

18TH ANNUAL SYMPOSIUM AND MINI-SHOW

FOCUS: CURRENT TOPICS IN RF AND MICROWAVE COMMUNICATION

Thursday, October 2, 2003
Radisson Hotel Fairfield, 690 Route 46 East, Fairfield NJ 973-227-9200

The conference presents a series of 11 lectures describing the state of the art in Microwave, RF, Optical and Wireless, technologies by leaders in their respective fields.

Presentation Schedule (9:15AM to 5:30PM)

Time	Topic	Speakers	Title	Affiliation
9:15	Opening Remarks	George Kannell	IEEE MTT/AP-s Technical Sessions Chair	Lucent Technologies
9:30	Microwave Absorber Design	Paul Dixon	Senior Microwave Engineer	Emerson & Cuming Microwave Products
10:00	Ultra-Low Phase Noise High Frequency Oscillators up to Millimeter Wave Frequencies	Mark Darrow	Vice President of Sales	OEwaves
10:30	Break / Mini Show			
11:00	A New Very High Resolution Interference Rejection Method for Communications and Radar Systems	John Minkoff	Staff Scientist	ITT Aerospace
11:30	PLL and Jitter Measurements	Mike Hertz	Field Applications Engineer	LeCroy
12:00	Lunch			
1:00	PLLs 101 : Basic Operation and Design Tradeoffs	Ray Baker	Senior Applications Engineer	Peregrine Semiconductor
1:30	A transmitt and receive 2x16 Switch Matrix, Antenna Feed, Designed for 28 GHz LMDS	Larry Silverman	Vice President and Chief Technical Officer	Aeroflex KDI Integrated Products
2:00	Power and Noise Measurements	Bent Hessen-Schmidt	Executive Vice President	Noise Com
2:30	High Voltage GaAs FETs: A Prospective	Jon Shumaker	Applications Engineer	Fujitsu Compound Semiconductor, Inc.
3:00	Break / Mini Show			
3:30	Advanced Power Amplifier Design using Integrated 3D Electromagnetic Simulation Techniques	Bill McGinn	Director of Applications	Ansoft
4:00	Selecting A/D Converters for Receivers and RF Applications	Brad Brannon	Senior Systems Applications Engineer	Analog Devices
4:30	3G Wireless Technology Evolution	Paul Polakos	Director	Lucent Technologies
5:00	Closing remarks	Kirit Dixit	IEEE MTT/AP-s Chair North Jersey Section	RF Electronic Sales

MINI SHOW FEATURING LATEST PRODUCTS - (10:00 AM TO 5:30 PM)

Details will be published in the October issue of the NORTH JERSEY IEEE NEWSLETTER and at http://www-ec.njit.edu/~ieeenj/NEWSLETTER.html

For Further Information Contact: Kirit Dixit (516-624-3800), Har Dayal (973-633-4618), Willie Schmidt (973-492-0371) or George Kannell (973-386-4170)

ALL ARE WELCOME (IEEE Membership not required).
THERE IS NO CHARGE TO ATTEND THE SYMPOSIUM OR SHOW.
FREE BREAKFAST / LUNCH INCLUDED FOR ALL.

NJ PES/IAS:

Power Systems Grounding Technical Seminar

The PES and IAS Chapters will sponsor a one-day seminar covering Power Systems Grounding. The session will be held on Friday, October 24th at JCP&L, 300 Madison Avenue, Punchbowl Room, Morristown, NJ 07962.

About the Seminar

The instructor will be David Shipp, P.E., Product Line Manager and Principal Engineer for Cutler-Hammer Engineering Services and Systems Division. Dave has over 31 years of experience, is an IEEE Fellow and a member of the Society of Petroleum Engineers. He has published several papers for IEEE and EC&M Magazines. Dave is an active member of several of the IEEE working groups that publish the IEEE Color Book Series. Dave has recently published many papers on the topic of electrical submersible pumps for the Society of Petroleum Engineers as well.

Power System grounding is the most misunderstood aspect of power system design. This technical seminar will cover the characteristics of different power system grounding techniques, industry practices, NEC requirements, Ground Fault Protection and Detection, special generator grounding requirements, switchgear ground fault testing requirements, Electronic Grounding, Ground mats, etc.

The key points to be covered are:

1. Characteristics of Different Power System Grounding Techniques
2. Types of System Grounding
3. NEMA/Arcing Ground Faults
4. NEC Article 250 -- Grounding
5. NEC Article 230-95 -- Ground Fault Protection
6. Performance Testing -- (Switchgear GFP)
7. Electronic Grounding
8. System Ground Fault Protection Modifications
9. Ground Mats/Bonding

The registration fee for this seminar prior to October 10th will be $150 (non-IEEE members), $100 (IEEE Members), and $50 (students with valid ID). The fee will be waived for IEEE Life Member Grades with verification at the seminar. Registrations after October 10th must include an additional late fee of $25. The seminar fee includes lunch, refreshments and handouts. Non-members joining IEEE within 30 days of the seminar will be rebated 50% of the IEEE registration charge.

Time: 9:00 AM to 3:00 PM, Friday, October 24, 2003.
Place: JCP&L, 300 Madison Avenue, Punchbowl Room, Morristown, NJ.
Directions: Route 287 to Route 124 Exit in Morristown. Follow signs toward Madison, JCP&L is about 1.5 miles on the left side.
Information: Ronald W. Quade, PE, (212) 833-0268 or RonaldWQuade@eaton.com.

Registration: Power Systems Ground Technical Seminar 10/24/2003

Register via US mail to:
Ronald W. Quade, PE
Eaton Cutler-Hammer
830 Third Avenue
Suite 920
New York, NY 10022

Name _____

Address _____

Phone_____ Email _____

IEEE #_____ Student @_____ Non IEEE_____ Life Member_____

Payment Enclosed $_____ Add $25 late registration after October 10th

Make Check payable to North Jersey Section IEEE

IEEE North Jersey Section Seminar

OBJECT-ORIENTED C# DESIGN & PROGRAMMING

Tuesday Evenings, November 18, 2003 through January 20, 2004, Eight weekly classes
(11/18, 11/25, 12/2, 12/9, 12/16, 1/6, 1/13, 1/20) from 6:30 PM to 9:00 PM
Wessley Inns & Suites, 265 Route 3 East, Clifton, NJ 07014
(Checks should not be mailed to this address)

ABSTRACT

Microsoft has created .NET as its path to future software development. . NET is a complete package of capabilities on top of MS Windows. .NET supports Visual basic, C++ and Java, but 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 efficient programs with more obvious code. This course covers MS Visual .NET development and uses C# as the O-O programming language to exercise it. The course begins with the environment and motivation for .NET and the mechanics of the C# language. It covers the Common Language Runtime into which all languages compile and use of the Visual .NET development suite. It then describes C#'s ways to declare classes and use objects of those classes. C# is described in detail, including the sizeable libraries that support it, and the ability to create screen images (for console or internet).

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 much more powerful. 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, ASP.

Class size will be limited to a maximum of 25. Early registration is recommended.

WHERE:	Wessley Inns & Suites, 265 Route 3 East, Clifton, NJ. (Checks should not be mailed to this address)
WHEN:	8 Sessions, Tuesdays on November 18, 2003 through January 20, 2004; Time: 6:30-9:00 PM
COST:	With textbook or notes: IEEE (& affiliate) members $325; Non-IEEE members $425.
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. / _____ _____
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Employer:_____

Employer Address:_____

Home Address:_____

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

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