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INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Here It Is!

The Combined METSAC Newsletter
Featuring the Activities of

The Long Island Section

Along with the Activities of

The New Jersey Coast Section

The New York Section

The North Jersey Section

The Princeton/Central Jersey Section

SECOND CLASS MAIL
TIME SENSITIVE MATERIAL

POSTMASTER, PLEASE RUSH

ELECTRO '96 TECHNICAL PROGRAM

Show at a Glance

TUESDAY - April 30th

8:00	**G1** GENERAL Distributed Computing - Applications Without Boundaries
	W1 WIRELESS Personal Communication Services (PCS) Overview & Standards
	B1 BIO-MED The Shrinking of Diagnostic Testing Apparatus for Productivity & Process Control
	D1 DSP DSP-Based Speech Recognition for the Commercial Electronics Market
	G4 GENERAL Virtual teams & Workgroups A Paradigm Shift in Organizational Strategy
9:00	
10:00	**K** Keynote Address Dr. Victor B. Lawrence
11:00	
12:00	Lunch & Exhibit Viewing
1:00	**G2** GENERAL The Internet
	W2 WIRELESS Wireless Networks & Access Methods
	B2 BIO-MED Micro-Electro-Mechanical Systems (MEMS)
	D2 DSP Image Processing & Compression
	G6 GENERAL Outsourcing Technical & Engineering Services
2:00	Break
3:00	**G3** GENERAL Tutorial: Internet
	W3 WIRELESS Major Modulation Methods for Wireless Communication
	B3 BIO-MED Computing Methods for Biomedical Applications
	D3 DSP Advances in DSP Device Design Technologies
	G7 GENERAL Outsourcing A Simulation & Case Study
4:00	

WEDNESDAY - May 1st

	W4 WIRELESS Propagation & Interference
	B4 BIO-MED Applications of Imaging Technologies for Medical Diagnosis
	T1 TELECOM Convergence: Service Providers, Technologies & Changing Requirements
	G8 GENERAL Intellectual Property Rights & Law
	E3 ELECTRO-OPTICS Electro-Optics System Solutions for Biomedical Applications
	T4 TELECOM Industry Trends in Networking, Network Managing, Signaling & Control
	W5 WIRELESS Transceiver Design for High Volume Manufacturing
	B5 BIO-MED Minimal or Non-Invasive Surgical Technologies
	Break
	G9 GENERAL Walking through an Application with Visual C (Part I)
	E4 ELECTRO-OPTICS Emerging Market of Electro/Optics Systems Design (Part I)
	T5 TELECOM Digital Services to the Home
Lunch and Exhibit Viewing	
	E1 ELECTRO-OPTICS E/O Systems Simulation & Analysis Tools/Methods
	D4 DSP Embedded Real-Time DSP Apps for Comm Systems
	T2 TELECOM Network Management for the 21st Century (Part I)
	G10 GENERAL Walking through an Application with Visual C (Part II)
	E5 ELECTRO-OPTICS Emerging Market of Electro/Optics Systems Design (Part II)
	T6 TELECOM Personal Satellite Communications Techniques & Trends
Break	
	E2 ELECTRO-OPTICS Electro-Optic Components & Subsystems
	D5 DSP New Directions in DSP-Based Biomedical Systems
	T3 TELECOM Network Management for the 21st Century (Part II)

Keynote Address

Victor B. Lawrence, Ph.D.
Director Advanced Communications Technology AT&T Bell Laboratories

Dr. Lawrence is a Fellow of the Institute of Electrical and Electronic Engineers, and a Fellow of AT&T Bell Laboratories. He was named 1995 Black Engineer for outstanding technical contributions. In 1994-95 he was the Chairman of the IEEE Awards Board and in 1992-93 he was Vice-Chairman.

FROM THE METSAC CHAIR....

One of the projects that was near and dear to my heart this year was the production of a multi-section Newsletter....and here it is! In the '90s, everyone (including your IEEE Section) is trying to save money. If this experimental issue works to everyone's satisfaction, perhaps the Sections can save some much needed money, to use for Chapter or other activities. We are indeed fortunate to have the availability of cooperative experts in this logistically and politically difficult task. I believe that we have avoided the dreaded "NIH" (not-invented-here) effect. I also want to express my gratitude towards the companies, universities, other organizations....and spouses....in our METSAC area for making time available for these folks.

We have had a number of ambitious goals for this year. Besides the Newsletter, I wanted to have METSAC and its member Sections march onto the Web, with a home page. The idea was to utilize our student branches to implement and maintain the pages, and perhaps to provide some modest funding for the student branches or for the specific students actually doing the work. The idea has worked well in two of the Sections and moderately well in METSAC itself. The North Jersey and New Jersey Coast Sections have excellent home pages which are linked to the IEEE or the Sections. We still hope to complete this activity before the end of the academic year. Another goal which has not been achieved is the provision of the full Internet access to METSAC members at some reasonable cost. At present, we are working with a provider in New Jersey to determine what cost structure could be negotiated and what level of 800-number support could be built into the member cost for service. Again, I hope that some proposal can be published in the various Section Newsletters before the end of my term in office.

Because of decreasing income from ELECTRO, I have been searching for educational activities which could bring in some needed money to support METSAC operations. One course of study which seems to be of potential interest to members is EDI (Electronic Data Interchange). This new technique is being used by both Government and Industry to exchange Request for Quote, proposals, invoices and payment. In face, before one more year has passed, the Government (by mandate) will use this method for all procurements of under $10,000. Even, if the time table slips, EDI is what's happening...there are commercial companies that only do business using EDI. I want to contract with an instructor to run a course or courses, which would be open to members at some cost and non-members at a somewhat greater cost. I have received a proposal from the APL group, and if we can find at least 25 persons interested, will run a one day course for about $295.

Of course, METSAC is trying to support the 1996 ELECTRO to be held at the end of April. Through the efforts of ELECTRO Technical Program Chairman, Eduardo Palacio (1994-1995 METSAC chair and 1995-1996 METSAC Treasurer), a wonderful technical program has been formulated to accompany the exhibition. It is our hope that all METSAC members will assist in publicizing the show and program so that we will realize the goal of an exhibition half full of exhibitors and attendees. I have asked each Section to provide support including doing "grunt" work such as distributing literature to companies, contacting management to get permission for attendance, etc. I hope that ELECTRO is a success this year, for if it is not, we'll have to find a replacement for the income and possibly the show itself.

I have enjoyed this year and the various challenges which have been presented to me. The fat lady has not yet sung, but soon it will be time for someone else to take charge. With any luck, the next Chair will ;have an easier time and be able to set off on more student-related, member-supporting, employment-enhancing tasks without as many financial concerns. Please feel free to contact me with any questions or concerns....and for sure, if you want to help in any way at all.

Dick Snyder
otherwise known as
r.snyder@ieee.org

Calendar of Upcoming Events

April 2, 1996 (Tuesday) 7:00 PM
The Long Island Section - Consultant's Network - The discussion of a 1996 Consultant's Network Directory mailing will be the main agenda item. Please note that this is Tuesday meeting - 131 Hoffman Lane, Hauppauge, Exit 57 off the LIE For further information please call Peter Buitenkant at (516) 491-3414.

April 3, 1996 (Wednesday) 7:00 PM
The North Jersey Section - Executive Committee Meeting, Plant 11 GEC-Marconi, 164 Totowa Road, Totowa, NJ
For further information please call Sergei Bogaenko (201) 785-3673 (H)

April 10, 1996 (Wednesday) 4:45 PM
A lecture hosted by the Long Island Section -- Airborne Radar for the 21st Century - - in AIL's main auditorium, Commack Road, Deer Park. See article in this issue. For further information please call Tom Campbell at (516) 595-38076

April 10, 1996 (Wednesday) 5:45 PM
The North Jersey Section Signal Processing Chapter and the NJIT Communications and Signal Processing Center "Very Low Bit Rate Video Compession: Standards And Technologies" - NJIT, ECEC 202, Newark, NJ
For further information please call Yun Shi at (201) 596-3501

April 11, 1996 (Thursday) 7:30 PM
The North Jersey Section PACE "Engineer`s Network Association: An Experiment in Career Networking Forum" - JCP&L Co., 300 Madison Avenue and Punch Bowl Road, Morristown, NJ.
For further information please call Robert Sinusas at (201) 228-3941

April 11-June 27, 1996
The North Jersey Section "Seminar: Visual Basic, 11-Sessions" - JCP&L Vo., 300 Madison Avenue and Punch Bowl Road, Morristown, NJ. For further information please call John Baka at (201) 455-8534

April 15, 1996 (Monday) 11:30 AM
The North Jersey Section Communications Society and the NJIT Communications and Signal Processing Center "Distributed Dyunamic Radio Resource Management In Wireless Networks" - NJIT, ECEC 202, Newark, NJ
For further information please call N. Ansari at (201) 596-3670

April 15, 1996 (Monday) 6:15 PM
New York/Long Island Sections -- EMC and EMBS Joint Meeting - TOURO College of Health Sciences Rm. 79 Building 14, West Road, Long Island Development Center, Dix Hills. See article in this issue.
For further information please call Robert Berkovits at (516) 346-7782.

April 16, 1996 (Tuesday) 8:00 PM
The Princeton/Central Jersey Section -ACM / IEE-CS Chapters Joint Meeting - Java: The New Language For Internet Applications, David Sarnoff Research Center, Routes 1 and 571, Princeton, NJ.
For further information please call (609) 924-8704 or Dennis Manci at (908) 582-7086 or Rebecca Mercuri at (609) 895-1375.

April 17, 1996 (Wednesday) 6:30 PM
The North Jersey Section Communications Society and the NJIT Communications and Signal Processing Center "Analysis Of Handoff Algorithms" - NJIT, ECEC 202, Newark, NJ. For further information please call N. Ansari at (201) 596-3670

April 17, 1996 (Wednesday) 7:00 PM
The Long Island Section -- EAC meeting at Polytechnic University, Farmingdale campus.

April 17-May 15, 1996
The North Jersey Section "Seminar: Microwaves In Industry And Medicine, 4-Sessions" - JCP&L Co., 300 Madison Avenue and Punch Bowl Road, Morristown, NJ. For further information please call John Baka at (201) 455-8534

April 18, 1996 (Thursday) 7:30 PM
The North Jersey Section Power Engineering/Industrial Application Society Chapters - "Pulsed Resistance Welding With Homopolar Generators" - JCP&L Vo., 300 Madison Avenue and Punch Bowl Road, Morristown, NJ
For further information please call Dennis Hildenbrand at (201) 366-1362

April 20-21, 1996
The Princeton Section/ACGNJ/Trenton State College/Mercer County College/CJCC/NYACC/PHUG - The Trenton Computer Festival, Mercer County Community College. For Further information please call (717) 529-6134, e-mail: TFC.info@edit.com, World Wide Web Home Page: http:/www.dorsai.org/fair

Calendar of Upcoming Events (cont.)

April 22, 1996 (Monday) 10:00 AM
Communications Society New York Chapter - Tour of the Enhanced Version of the 911 Emergency Calling System. 11 Metrotech Center in Brooklyn (reservations required). For Further information please call Brian Murphy at (914) 644-4100

April 25, 1996 (Thursday) 5:00 PM
The North Jersey Section Control Systems Society - "Jump Parameter Linear Stochastic Control Systems And Their Optical Control Via Lyapunov Iterations" - NJIT, ECEC 202, Dept of EE, Newark, NJ
For Further information please call Prof. T. Chang (201) 596-3519

April 25, 1996 (Thursday6:30 PM
The Long Island Section Communications Society - "Application of Neural Networks and Fuzzy Logic Systems"
Polytechnic Institute, Route 110, Farmingdale.

April 26, 1996 (Friday) 6:00 PM
The New Jersey Coast Section - 1996 Annual Awards Banquet
Molly Pitcher Hotel & Restaurant, Red Bank, NJ. For information call G. McBride at (908) 699-8472

April 29, 1996 (Monday) 6:00 PM
The Long Island Section-- EXCOM Meeting at AIL

April 30 - May 2, 1996
Region 1, METSAC & CNEC, IEEE and the New York and New England Chapters, ERA - ELECTRO ' 96
Garden State Convention Center, Sommerset, New Jersey

May 1, 1996 (Wednesday) 7:00 PM
The North Jersey Section - Executive Committee Meeting, Plant 11 GEC-Marconi, 164 Totowa Road, Totowa, NJ
For further information please call Sergei Bogaenko (201) 785-3673 (H)

May 4, 1996 (Saturday) 9:00 AM - 4:00 PM
The Long Island Section -- Cruising on the Information Super Highway -- A fee is required - Sheraton Long Island, 1100 Vanderbilt Motor Parkway, Smithtown, NY - see article in this issue for details.
For further information please call Tom Campbell at (516) 757-3008.

May 5, 1996 (Sunday) 2:00 PM
The Long Island Section -- Annual Awards Ceremony - Huntington Hilton 598 Broad Hollow Road, Melville. See article in this issue.

May 6-7, 1996 (Monday & Tuesday Evenings)
The North Jersey Section - Multimedia communications: Technologies, Systems, and Services by Amruthur Narasimhan, Video Conferencing and Multimedia, AT&T Bell Laboraties. For information call Zygmond Turski at (301) 871-9609

May 18, 1996 (Saturday) 9:00 AM - 4:00 PM
The North Jersey Section Consultants Workshop- "1996 Internet Workshop"
NJIT Room 1400, ITC Bldg., Newark, NJ. For more information call David Greenspan at (201) 882-8562

May 19, 1996 (Sunday) 3:00 - 5:00 PM
The North Jersey Section Awards Reception
Birchwood Manor, 111 North JeffersonRoad, Whippany, NJ. For more information call Anne Giedlinski at (201) 455-8556

May 23, 1996 (Thursday)
Communications Society New York Chapter - "CONVERGENCE: The promise of Single-Media Solutions"
For more information VOX (718) 816-5222 or e-mail: j.p.barbera@ieee.org or FAX: (212) 465-8877

June 3-6, 1996
The Long Island Section -- Dual Use Technologies and Applications Conference - sponsored by New York State Technology Enterprise Corporation. For information please call Cindy Cooley at (315) 330-1471

September 16-17, 1996 (Monday & Tuesday Evenings)
The North Jersey Section - Multimedia communications: Technologies, Systems, and Services by Amruthur Narasimhan, Video Conferencing and Multimedia, AT&T Bell Laboraties. For information call Zygmond Turski at (301) 871-9609

EDITORIAL

by Kenneth Mas
kmas195@aol.com

GREETINGS TO ALL!

A hot topic at recent Long Island EXCOM meetings has been the state of manufacturing on the Island. Some members have expressed concern that due to the high cost of manufacturing in the region, our manufacturing sector is eroding. And with this erosion, the displacement of engineers will continue.

Others continue to feel, however, that our manufacturing base is healthy. They point to recent formations of small engineering firms and the continued success of a couple of larger engineering and software firms.

I believe that given the immense talent, creativity and perseverance of the Long Island engineering community, we certainly should be able to maintain a viable manufacturing industry. On the other hand, the raw data tends to support the skeptics. Even though the following statistics[1] represent New York State, they are ever so more pertinent to Long Island. It's no surprise that energy costs in the region have increased tremendously. During the period of 1970 to 1992 industrial retail electric prices increased 453 percent. During the same period, gas prices rose 659 percent. Employee compensation components are another concern for employers. Although salary is usually the primary component, the cost of other elements, such as health care, seem to be burgeoning. As an example, consider the skyrocketing costs of worker compensation claims. In 1970, 118,537 cases were closed by the Workers' Compensation Board at a cost of $188 million. Just 18 years later a similar number of cases were closed, 125,008, but at a cost of $907 million or an increase of 380 percent. Add these to the ever-increasing costs of property and school taxes (the non-operative Shoreham nuclear facility serves as a reminder) and the other business operating costs, one has to be skeptical about the long-term survival of manufacturing throughout the region.

Do these statistics correlate to an erosion of the manufacturing sector? You decide! In 1970, an average of 1.76 million individuals were employed in the manufacturing sector. By the end of 1993, that number dropped by nearly half to .967 million. Unfortunately, figures aren't available for the electric and electronic industry for the entire period. However, from what is available, the figures for this industry paint a picture just as bleak. In a four year period, 1988 to 1991, employment in this industry decreased by 18.5 percent. It is interesting to note that some EXCOM members scoff at the idea of a service economy taking over the region. Yet during the period of 1970 to 1993, employment in the service sector increased by 1.074 million jobs, or 78.9 percent.

What is troubling is that an increasing number of colleagues and some EXCOM members have advised me of their firms' willingness to place or explore the placement of their manufacturing component in other areas, such as the Pacific Rim. Management of these firms typically must be concerned not only with the above cost components and competition, but also with the illegal reproduction of their products. And now, with the advanced stage of telecommunications, it's even more apparent that a firm does not have to produce in a particular area to reap the benefits from that area.

To address Long Island's business plight, we have formed an Economic Development Group. Although I haven't seen its full agenda, I would imagine that it will address the aforementioned issues. It's a start, but we should be able to do even more as a collective body. Obviously, the processes that worked 25 years ago are not successful in today's global economy. While I don't have a quick fix to reverse the trend of an eroding manufacturing base, I know we need to generate ideas that will result in cost-effective, distinguishable production processes. Doing so will not only ensure the continued viability of manufacturing on Long Island, but for the entire region.

[1](Please note that these statistics were compiled from data derived from the 1995 New York State Statistical Yearbook, 20th edition, published by the Nelson A. Rockefeller Institute, State University of New York.)

LI SECTION 1996 OFFICERS BALLOT

The following people were recommended as candidates for the 1996-1997 Long Island Section office by the EXCOM Nominations Committee. Although there were no petition candidates, provisions have been made on the ballot for write-ins. Please send completed ballots to Dr. Charles Buntschuh, 15 Lloyd Haven Drive, Huntington, NY 11743. Your name, address, signature and membership number must appear on the envelope.

BALLOT: 1996-1997
LONG ISLAND SECTION OFFICERS

CHAIRMAN
❒ Nadar Bolourchi ❒ Other _____ (write in)

FIRST VICE CHAIR
❒ Harvey Altstadter ❒ Other _____ (write in)

SECOND VICE CHAIR
❒ Amnon Gilaad ❒ Other _____ (write in)

SECRETARY
❒ Walter Whipple ❒ Other _____ (write in)

TREASURER
❒ Babak Beheshti ❒ Other _____ (write in)

Weber Research Institute

WRI INTERNATIONAL SYMPOSIUM
on
DIRECTIONS FOR THE NEXT GENERATION OF MMIC DEVICES AND SYSTEMS

September 11-13, 1996, New York City

Honorary Chairman
A. A. Oliner
Polytechnic University

General Chairs
H. L. Bertoni
Polytechnic University
N. K. Das
Polytechnic University

Technical Program
D. Bolle
Polytechnic University
J. F. Harvey
Army Research Office
A. Hessel
Polytechnic University
S. Sanzgiri
Texas Instruments

Special Sessions
G. Gerinic
Raytheon
K. C. Gupta
University of Colorado
M. King
Riverside Research Institute
S. Ponnapalli
IBM
V. K. Tripathy
Oregon State University

Advisory
T. Campbell
Long Island IEEE Section
C. Gupta
North Jersey IEEE Section
F. Schindler
IEEE MTT-Society
P. J. McVeigh
AIL

SECOND CALL FOR PAPERS

Microwave and millimeter-wave integrated circuits are becoming increasingly important in modern military and commercial communication systems. Current trends are towards low-cost, high-density, multilevel, and multifunctional integration, covering millimeter and submillimeter wave regions. The integration of diverse subfunctions, such as light-wave devices, superconductor circuits, digital circuits and ferrite devices, together with conventional microwave or millimeter-wave devices, circuits and antennas, would allow implementation of large systems on a single chip. Research on advanced device concepts, 3-D interconnects, high-performance packaging methods, advanced CAD-tools, measurement and testing techniques, as well as material and fabrication technologies, are being directed to meet the new challenges.

Continuing on our Weber Research Institute's series of symposia, we will host an international symposium on the recent developments and new research directions for the next generation of microwave and millimeter wave integrated circuits and systems. It will be organized as a 3-day symposium, running in a single-session format of regular papers, poster presentations and panel discussions. The symposium will be held in our CATT Auditorium located at the Metrotech Center, Brooklyn, New York. Hotel accommodations will be available in the Manhattan area, conveniently connected to the conference site by subways. The extended versions of the papers will be published as a bound volume by Plenum Press, New York.

The topics of interest cover various aspects of the following suggested areas:

- Components and Devices
- Novel Transmission Media
- Printed Antennas and Phased Arrays
- Multilevel Integration
- Interconnects and Packaging
- Multifunctional Integration
- Fabrication Technology
- Measuremet, Testing and Reliability
- Application Systems
- CAD Tools and Environment
- Analytical/Computational Techniques
- Guided Wave Effects and EM-Theory

TIME TABLE: • Final Call For Papers: **February 1995.** • Submission of One-page Summary: **March 30, 1996.** • Notification of Acceptance: **May 30, 1996.** • Extended Manuscript for Publication: At the Conference Registration.

Send two copies of one-page abstracts addressed to Prof. Nirod K. Das, Conference Co-Chair, 1996 WRI Symposium, Polytechnic University, Route 110, Farmingdale, NY 11735. For further information contact Tei: (516) 755-4228, Fax: (516) 755-4404, E-mail: ndas@prism.poly.edu.

Sponsor: Weber Research Institute, Polytechnic University, New York

Technical Co-sponsors: IEEE Microwave Theory and Techniques Society, IEEE Antennas and Propagation Society, in Cooperation with IEEE Long Island and New York Metropolitan Sections

LI SECTION, AIL TO CO-HOST A DISTINGUISHED LECTURE

The LI Section and AIL have joined together to institute a Distinguished Lecture Series "Airborne Radar for the 21st Century: The Space Time Adaptive Array", which will bring internationally known speakers to Long Island. The first lecture in the series will be presented by Dr. Ronald L. Fante of the MITRE Corp. at 4:45 pm on April 10th in AIL's main auditorium, Commack Road, Deer Park. This first lecture in the series will be presented in conjunction with the LI Antenna and Propagation Society Chapter. Future radars and, indeed, many communication systems will need the sophistication and real-time flexibility to meet mission requirements.

Future radars will need to detect low radar-cross section targets under stressing conditions that include severe ground clutter, jammers and jammer multipath. The clutter problem is exacerbated for airborne radars because ground clutter in the radar sidelobes is spread in Doppler and is not removed by conventional MTI (moving target indicator) filters. Consequently, a radar that is adaptive in both space and time is required. In this lecture, we will review how adaptive arrays work and present their generalization to the space-time adaptive radar. The performance limitations imposed by internal motion of the ground clutter, radar platform crabbing, electromagnetic interaction of the antenna array with the radar platform (aircraft) on which it is mounted, channel equalization, jammer multipath, etc. will be evaluated. Available measured performance will be discussed.

Because fully adaptive space-time arrays are computationally intensive, some suboptimum approaches will also be examined.

Ronald Fante holds a Ph.D. from Princeton University and has more than 30 years experience in electromagnetics and radar. He is a fellow of the IEEE, the Optical Society of America, and the MITRE Corp. He has authored more than 130 journal papers and is listed in Who's Who in America.

The meeting is open and free of charge to the public; however, since the lecture will be at AIL, please let us know if you will attend so we can properly notify AIL security to expedite admittance. To obtain further information on this distinguished lecture, or to join the speaker for a post-talk dinner, call Tom Campbell at (516) 757-3008, or Ed Palacio at (516) 595-3807.

IEEE-LONG ISLAND SECTION

MEETING

CRUISING ON THE INFORMATION HIGHWAY

FULL DAY SEMINAR: 9:00 AM TO 4:00 PM
SATURDAY MAY 4, 1996

Sheraton Long Island, 1100 Vanderbilt Motor Parkway, Smithtown, New York

Cruise Director: Dr. CHARLES RUBENSTEIN (Pratt Institute)

8:15 am Registration and Continental Breakfast
9:00 am classes, 10:15 coffee/tea/soda, 12:00 Lunch,
1:00 pm classes 2:15 coffee/tea/soda

Overview the past, present and future of the Internet. What are BBS, E-mail, and World Wide Web entrances to the National Information Superhighway? Who are the providers of Access to the Internet? General information on PC hardware (a PC-compatable with a Modem) and software requirements for getting on-line with NETCOM's NetCruiser browser software. On-line PC demonstration of the NetCruiser browser, explanation of typical modem software setups and testing, BBS, e-mail, text and graphical WEB Internet access.

Installing NetCruiser and Netscape Navigator browser software. Using basic Internet Tools; Telnet, FTP and Gopher. Other Internet browsers and special software; Lynx, Cello, Mosaic, CGI-BIN, VRML, Java, etc. Getting an e-mail address, IEEE aliases and resources. Engineering, technical and businesses resources on the Internet and how to find them, entertainment on the Internet, on-line commercial ventures, on-line malls and sales.

INFORMATION: ☎ TOM CAMPBELL (516)-757-3008

Registration and Fee Schedule

Circle or check fee, check membership status, complete this form and send it with your payment to:
IEEE Long Island Section INFORMATION HIGHWAY CRUISE PO Box 36, Greenlawn, New York 11740-0036

IEEE Member YES ☐ NO ☐ IEEE membership #_____
Last name_____ First name_____ Phone_____ FAX_____
Affiliation_____ email_____
Address_____ City_____ State_____ Zip_____

	Regular	Student	Retired member	Unemployed
IEEE Members	$240.00	$175.00	$215.00	$195.00
Non-members	$300.00*	$230.00*	$280.00*	$255.00*

Make checks or money orders payable to IEEE Long Island Section
*The non-member/member price differential can be applied to IEEE membership applications if accomplished prior to the end of session.

Included free with all registrations is breakfast, coffee breaks, lunch and the following tools and services which will assure that you find an easy ramp onto the Internet; NETCOM's NetCruiser™ browser, internet registration, one month service, David Peal's text "Access the Internet!", course notes, and shareware (an over $125.00 value).

LI SECTION AWARDS BANQUET

On May 5th the Long Island Section will hold a banquet at the Huntington Hilton to honor several dedicated members for their technical achievements, contributions to the Profession and service to the organization. We will honor the following members:

- Joseph R. Fragola - Fellow Award- For contributions to the theory and practice of human reliability modeling and the development of the art and engineering of reliability databases.
- Richard J. Gambino - Fellow Award - For the discovery of perpendicular anisotropy in amorphous magnetic materials and for the development of these materials for the erasable magneto-optical disk industry.
- Richard J. Mohr - Fellow Award - For contributions to the development of Electromagnetic Compatibility models for the prediction of radiated and conducted emissions and for predictions of wire and cable cross talk.
- Jerome Swartz - Fellow Award - For invention and leadership in the development of practical hand-held laser bar code scanners and related data transaction systems.
- Irwin Weitman - Alex Gruenwald Award - For his many activities and accomplishments to the benefits of engineers on Long Island and the United States.
- Peter J. McVeigh - Charles J. Hirsch Award - For innovative phased array antenna systems for tactical microwave landing systems.
- Henry L. Bachman - Harold A. Wheeler Award - For outstanding technical leadership and service to the electrical engineering community.
- Rod Lowman - Region 1 Lifetime Award - For his career-long service to the membership of Region 1 and in recognition of his outstanding contributions to the Electrical Engineering Profession.
- Harvey Altstadter - Region 1 Award - For providing direct assistance to Long Island Section members through his leadership in the Employment Assistance Committee.
- Thomas Campbell - Region 1 Award - For his outstanding leadership in organizing technical symposia of international proportions for the Long Island Section.
- Petar Djuric - Region 1 Award - For application of Bayesian Statistical Modeling to engineering problems.
- Chung-Tao David Wang - Region 1 Award - For technical innovation and leadership in Advanced Neural Networks Applications for Air Quality, Collision Warning, Monitoring and Electronic Warfare.
- Polytechnic Institute of New York at Farmingdale - (Thomas Leo - president, Professor Peter J. Voltz - faculty advisor)

In addition to the awards, we will have a speaker or two, and a wonderful banquet. The banquet will be held on Sunday, May 5, 1996 from 2:00-5:00 PM. If you are interested in attending, please send your check (RSVP by April 15, 1996) for $12.00 per person to :

Harvey Altstadter
23 Whinstone Street
Coram, NY 11727

The check should be made out to IEEE L.I. Section.

MICROPROCESSORS AND SOFTWARE FOR THE NOVICE

The Long Island IEEE Section is presenting a five session (3 hours per session) training course "*Microprocessors and Software for the Novice*". It will be given at AIL Systems on Commack Road in Deer Park on five consecutive Thursday nights, from 6 to 9 PM beginning April 18, 1996.

This course is for engineers and managers who need a better understanding of the terminology, advantages, and pit-falls of today's microprocessor/software technology. It will also serve the needs of the entry level hardware or software engineer who can gain much practical knowledge based on the many years of experience of the engineer/instructor.

The instructor is Peter Buitenkant, MSEE, a software consultant and Chairman of the IEEE Consultants Network of Long Island. Mr. Buitenkant has been active in designing embedded microprocessor systems hardware and software since their introduction commercially in the early 1970's. He has designed systems based upon microprocessors developed by National, Motorola, Intel, Hitachi, Signetics and Intersil. He has shared his experience by teaching microprocessor courses since 1976 at Cardion, AIL, Litton Systems, Loral Systems, and Peterson Associates.

Content

I. Purpose of this course
   a. What you will learn: hardware / software
   b. Make or buy. Resist temptation to reinvent.
   c. What can the uP do?
      - Families
      - Abilities and constraints

II. Programming languages
   a. Comparison of strengths and weaknesses
   b. The software development process
   c. Software tools

III. Good programming practices
   a. Ego-less programming
   b. Defensive programming
   c. Test to make it fail, not to see if it works
   d. Multi-module, relocatable code
   e. Flowcharting - reference labels, language
   f. Comment why, not what; comment block

IV. Programming in assembler
   a. Write a program
   b. Assemble the program
   c. Link the modules
   d. Run the program in a simulator
   e. Time execution; examine size of object file

V. Programming in C.
   a. Write a program (same as the assembler)
   b. Compile the program
   c. Link the modules
   d. Run the program under DOS
   e. Time execution; examine size of object file

Development tools
a. Simulators
b. Logic analyzers
c. In Circuit Emulators, demonstration.
d. Conclusion - Q & A

Registration

Make checks payable to *IEEE Long Island Section* and mail to Babak Behesti, 101 Caffrey Ave., Bethpage, NY 11714; include your address, phone and fax numbers. For info call Don Grieco at (516) 488-8171. The fees for the training course are:

Payment date	IEEE member	Non-member	Student/retired/unemployed
by April 12	$175	$250	$100
after	$225	$300	$150

PROFESSIONAL ACTIVITIES REPORT

by Irwin Weitman, P.E. i.weitman@ieee.org

Don't miss ELECTRO '96 sessions. Several members of the IEEE Consultants Network of Long Island will be presenting two sessions in the afternoon on Wednesday, May 1, 1996. All of the General Interest Track on Wednesday will be devoted to Downsizing and outsourcing. These sessions are specifically directed toward MANAGERS, but every engineer can benefit from the material to be presented. The relationship between management and workers in our society has changed, and the changes are continuing.

This Long Island group of experienced consultants has been working within the framework of these career changes for many years and we can all gain from their experience. The areas covered will include the range from part-time employee through job shopper, moonlighter, independent consultant, and consulting firm.

The last session of the day will be a SIMULATION AND CASE STUDY of an outsourced project. An open discussion with the audience will follow the presentation. DON'T MISS IT !!!!

In my previous reports, I discussed Professional Registration relative to the changes overtaking our industry. If you find yourself in a situation where you may not be considered an employee of a company, you may be subject to professional liability risk. First, my disclaimer: I am not a lawyer and never had any legal training. I have accumulated many bits of information, some of which may be misinformation, so if you find anything here that seems to affect you, don't act on my advice without seeking a professional legal opinion.

Until 1986, some of us in IEEE were able to obtain good Professional Liability Insurance from IEEE. Since then the only liability insurance available from it is virtually useless to a practicing design engineer. I know for a fact that IEEE has been trying to find an adequate policy, but so far has been unsuccessful. For those of us who are employed by a company and receive a W2 tax form, this discussion is not particularly relevant. However, if your situation is different or about to become different, then be aware of the potential risks. People have tried the course of incorporating as a business to obtain the benefits of limited liability. If you are a P.E., forget it! If you are not a P.E., you could argue the fact that you are not a professional and therefore the people that hired an incompetent are responsible. It's a rather weak argument. You could rationalize that no one will sue you because you don't have deep pockets. So what can you do? If you're a P.E., your defense is the due diligence you use in your practice. Also, your credentials and experience are in your favor.

The high risk areas are medical electronics, and dealings with lawyers and individuals. Your best protection is an agreement that has a hold harmless clause for your protection. The next best arrangement is to insist on being classified as an employee so that the courts consider you an agent of your employer. Being listed on the insurance policy of the company you work for has risks of it's own and you should seek legal advice if it's offered to you. Unfortunately, I can't provide you with a magic bullet but at least I have warned you to watch out for the alligators.

30 YEARS AGO

by Rod Lowman, Historian

Another stalwart of the Section, Christopher Witt, treated us to a description of the guidance and control system for the LEM (Lunar Escape Module) for the Apollo spacecraft. Chris was Head of the Guidance and Control Integration Group at Grumman and knew well the critical nature of those tense moments when astronauts would need to guide their craft to a soft landing on the surface. The romance of those heady days when the astronauts first trod the surface of the moon still lives as witness to the immense popularity of the movie Apollo 13. This movie recreates the actual story of the Apollo 13 mission and brings alive the importance of that guidance and control system which Chris described to us 30 years ago. Chris is another of those members of our Section who has pioneered in a critical area of electronics, which has put Long Island in the forefront of the space program in the country that fascinated the whole world for a full decade in the race to the moon. But that race was just a prelude to seeing and traveling further in space and learning more about this fascinating universe we live in. Just as Chris alerted us to the needs for guidance of space vehicles, IEEE meetings of today alert us to the needs of many different scientific adventures. Come to our meetings and learn from the experts how you, too, can delve into the ever changing world of electronics. It is an exciting world, don't miss it.

COMMUNICATIONS SOCIETY TO HOLD A TALK ON APPLICATION OF NEURAL NETWORKS AND FUZZY LOGIC SYSTEMS

The LI communications Society will host a talk on the application of neural networks and fuzzy logic to communication systems on Thursday, April 25, 1996 at 6:30 PM at Polytechnic Institute, Route 110 in Farmingdale. The training and learning characteristics of neural networks make them suitable in applications such as signal processing, image, voice, or data, as well as decision making. Communications systems encompass all of the above. Fuzzy logic, on the other hand, is a rule based tool for precision control where non-statistical or ill defined information is present. Many real world applications are found today in transportation, communications and sophisticated guidance systems.

The speaker Dr. Stamatios V. Kartalopoulos joined AT&T Bell Labs in 1979. Since then, he has worked on the development of real-time, high-speed architectures, their implementation with VLSI and microprocessors and on the development of high-speed protocols. He received his B.Sc. in Physics from the University of Athens, Greece, a Diploma in Electronics from the University of Wales, UK, and a M.Sc. and a Ph.D. in Electrical Engineering from the University of Toledo. He serves as Vice-President of Publications of the IEEE Neural Networks Council and Chairman of the IEEE Communications Society's Signal Processing and Communications Electronics Technical Committee.

FINAL CALL FOR PRESENTERS

Subject:	A case study of a successful implementation of A. Windows NT 3.5 Client Server B. Novell Netware 4.1 Client Server C. OS-2 Warp Client Server
Time Frame:	September 26, 1996
Place:	New York City (Midtown Manhattan)
Duration:	Full Day 9:00 AM - 4:30 PM
Organizer:	Mr. Jim Barbera, Chairman of The New York Chapter of the IEEE Computer Society c/o Metro Services Group Inc. 333 Fashion Avenue 20th Floor New York, NY 10001 Phone: (212) 594-7688 Fax: (212) 465-8877 e-mail: j.p.barbera@ieee.org
Schedule:	Submit an outline of TALK by June 9, 1996. Notification of Acceptance by July 1, 1996. Completed Copy of Presentation by September 3, 1996.
Submission:	All submissions are to be made to Jim Barbera at the above address. The 'Outline' can be sent via US mail, e-mail or Faxed. The completed presentation should be camera ready, or a floppy in Word, WordPerfect or PowerPoint.

EMC & EMBS (New York/North Jersey/Long Island Chapter)

present

A JOINT MEETING on TWO TOPICS

TOPIC #1: DESIGN TECHNIQUES FOR EMC/SAFETY COMPLIANCE
Applicable to
MEDICAL & INSTRUMENT DEVICES for EUROPEAN MARKET

TOPIC #2: Status of IEEE 1073 STANDARD
for
MEDICAL DEVICE COMMUNICATION

SPEAKERS
JERRY COHEN, TechWise
and
ROBERT KENNELLY, LinkTech

About Talk #1: EMC and product safety design issues should be considered at the beginning of a project because the various disciplines impact design decisions interactively. Early design planning and coordination can result in a better design completed in a more cost effective manner. Therefore, meeting these requirements forms a part of the instrument's initial product specification and are not "after-the-fact" requirements. Design considerations that will ensure successful compliance will be discussed.

About Talk #2: The first two documents of the 1073 (MIS) family of standards were approved by the IEEE in December 1994. With this passage, providers can now insist on 1073 compliant devices in their purchases. Progess of the working group will be reported: 1) Next documents to be approved. 2) Ballot status of documents 3) Harmonization efforts with other standards organizations , US & Europe and 4) Expected future work of the committee

An overview of the importance of automatic data collection using the 1073 standard with emerging hospital practices will be discussed. These include the moves toward clinical pathways in acute care and integrated delivery systems where clinicians will reside outside of the hospital buildings.

About Speaker #1 JERRY COHEN

Jerry Cohen is Co-President of Techwise Enterprises.
Background: Accomplished creative engineer with over 20 years of experience with demonstrated track record contributing to effective product definition and development. Defined system requirements and specifications for an RF communications system. Provided system planning for Worldwide Satellitite Communication System utilized by foreign news media. Design experience with RF, Microwave, and power supplies. Developed Analog and Digital circuits. Designed RF equipment and instruments. Developed battery charging and conditioning circuits. Served as Project Engineer for Patriot Missle Arm Decoy. Designed to and obtained certifications for MIL SPEC, YUL, CSA, VDE, CE agency specifications.
Education: BSEE, Hofstra University; New York City Community College.
Affiliations: Past President of Association of Old Crows.

About Speaker #2: ROBERT J. KENNELLY

Robert J. Kenelly is Market Manager, Medical Products for the LinkTech, Inc. subsidiary of ILC Data Device Corporation.
Background: Elected Chair of IEEE 1073 MTB General Committee in May 1994, after serving as Lower Layer Sub-Committee Chair since June 1993. He presented and co-authored the paper "New IEEE Standard Enables Data Collection for Medical Applications" at SCAMC in 1994. He also co-authored a position paper on Medical Device Interoperability that served as the terms of reference for a new project team.
Education: MBA in Marketing and Finance, Columbia University Graduate School of Business; BSEE Columbia University School of Enginering & Applied Science.

Meeting Details:

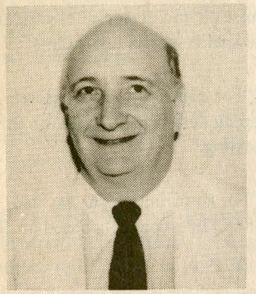
Place: Touro College of Health Sciences Institute for Biomedical Engineering & Rehabilitation Seervices, Room 79 Bldg. 14 ,West Road, Long Island Development Center, Dix Hills, NY
Date: MONDAY April 15, 1996 Time: 6:15 PM

Travel Hints:

From the intersection of Old Country Rd. and Rte. 110 which is just South of the Northern State Parkway Exit 40S and about ¾ miles North of the Rte 110 exit of the LIE EXIT 49N: Go Northeast on Old Country Rd. about 1/2 mile to a traffic light. About 100 yards past this light and just before a bridge over the Northern State make a sharp right and immediately a sharp left into the Long Island Development Center. Go past two stop signs and at West Road (there will be a sign) take a right. TOURO Bldg. 14 is the first building on the left. (Different recorded directions can also be obtained from 516-673-3200 which may be helpful in finding the campus but will lead you to building #10).

For more information: Robert Berkovits 516-346-7782.

New York Section Chairman's Column...



On The Combined METSAC Newsletter

As a Chairman of the New York Section I wish to welcome this joint publication of all of the METSAC sections. I believe that there is a great need for a joint publication that helps to relieve the burdens which have affected our area. Joint publications can have the following results:

- lower the publication cost to each section;
- help organize the various chapters by giving wider publicity to the meeting;
- allow members who live in one section and work in another to have wider access to information that may concern them;
- share the ideas which can stimulate IEEE growth in all sections;
- help organize chapter growth and establish the opportunity for membership growth in a declining engineering employment market.

The greater New York - New Jersey area has been hit hard by a loss of engineering jobs. This in turn has led to a decrease in IEEE membership. Joint publications like this can help IEEE garner a higher percentage of the unaffiliated electrical engineers to stop the loss of membership and aid in membership growth. It is necessary now for the IEEE to get a bigger share of the shrinking pie of our areas' engineers. Joint publications can also help our chapters get the general membership to be more active.

While there are many factors which contribute to the loss of jobs for engineers in our area, which were beyond the scope of IEEE activity to prevent, there were some that could have been mitigated by the IEEE voicing a position. This did not take place because of the many contradictions that exist in the IEEE which effect the US members in general and our members in particular.

The nature of these contradictions unfortunately caused the IEEE to exacerbate the situation instead of helping it. (Those who are interested in these ideas can see my series of columns in the monitor). It is clear that a stronger more independent USAB can aid US electrical engineers and at the same time help the IEEE to grow.

I greet this publication with a feeling of hope for the future. Many thanks to all the hard working volunteers who made this possible.

Len Rubenstein, PE

21 Awards Given - A Record

Fellow Grade Members, Region 1 Award Winners & Distinguished Service Award Recognized at New York Sections' Dinner Dance.

Friday, February 23, 1996 - The New York Hiton - IEEE, New York Section, Honored 10 Fellow Award recipients, 10 Region 1 Awards and the recipient of the Distinguished Service Award at its annual dinner dance.

The Fellow Grade is the highest level an IEEE member can obtain. It is conferred on those of outstanding qualifications and experience. The recipient must also have made an important individual contribution.

Election to the grade of Fellow is the means by which the IEEE recognizes excellence among its members in the advancement of the theory and practice of electrical and electronic engineering.

It is recognition accorded to the practitioner of outstanding technical contributions.

The practitioner is distinguished from the academic who teaches and from the theoretician who deals with basic concepts.

The work of the practitioner can be described as product development, application, construction, operation, and evolution into practical use or manufacturing .

Recognition is based on a product readily visible. For each Fellow selected there are usually more than two nominations. This year 245 members were elevated to the Fellow Grade.

The recipients were:

Hamid Ahmadi. "For critical contributions to high speed ATM networking technology and to wireless networking."

Lalit Rai Bahl. "For contributions to automatic speech recognition."

Rudolf M. Bolle. "For contribution to the development of versatile computer vision systems for deriving symbolic descriptions about object class from raw data."

Ambuj Goyal. "For contributions to the theory and practice of system dependability modeling."

Fred G. Gustavson. "For contributions to the efficient numerical simulation and design of electrical circuits using innovative sparse matrix algorithms."

Scott Kirkpatrick. "For contributions to discrete optimization, for developing design tools based on the theory of simulated annealing."

Martin W. Sachs. "For contributions to the architecture of computer I/O interconnects based on fiber optics."

Marc Snir. "For technical leadership in the development of parallel computation and scalable parallel systems architectures."

Louise H. Trevillyan. "For contributions to the development of automated logic synthesis of VLSI chips."

James F. Ziegler. "For contributions to ion implantation technology and to understanding the effects of radiation on terrestrial electronic systems."

This year a new was achieved for the New York Section. We received 10 of the 19 Region 1 Awards given. This was the largest number ever received to date for the New York Section. Included are two women, which is also a first for the Section. More important is the high standard that was obtained by each of these recipients. Bill Terry indicated "that we have a fine group of Nominees for 1995."

The Awards for the New York Sections are as follows:

Lawrence J. Bolick - For outstanding achievements in Communication Engineering, voice, data and image systems, and broadening visibility of the Communications Society.

Roland M. Dixon Jr. - For enhancement of IEEE through dedicated service to PES/IAS Chapters of the New York Section and Power Industry.

Jalal Gohari - For his service to IEEE, Power Engineering Society and for outstanding contributions to the profession in protective relaying.

Patrick M. Kerrigan - For outstanding technical achievements in application of research and development of electrical power control systems.

Bertil C. Lindberg - For contributions to electrical engineering professionalism and for outstanding service to the communications industry.

Haroun Mahrous - For outstanding lifetime contributions to electrical engineering education and industrial applications.

Nicole A. McFarlane - For services to IEEE in major contributions to the New York Section, industry and the local community.

Ronald A. Olsson - For dedicated service to the power engineering profession; for outstanding contributions to IEEE, New York Section, Power Engineering and Industrial Applications Societies.

Robert E. Puttre - For contributions to microwave antenna engineering and for outstanding service to the IEEE Communications Society.

Stacy M. Weaver - In recognition of outstanding achievements in organizing and promoting engineering student involvement in professional student societies activities.

Roger K. Sullivan - Recipient of the New York Section Distinguished Service Aware.

These 21 individuals are truly meritorious of the awards and represent the best in our profession. They have achieve high standards through excellent performance. It is a pleasure to be part of this process and to be able to present them.

The event was highlighted by the remark of our Chairman Len Rubenstein with the humor, good music, dancing and a fine meal. My complements to William Perlman, Chairman of Special Events for his efforts in making this happen. This surely was a special event in every way.

COMSOC FIELD TRIP
E911 TOUR

IEEE members interested in touring the new dazzling hi-tech NYC enhance version of the 911 Emergency Calling System center are invited to participate in a short lecture and tour on Monday April 22, 1996. The lecture starts at 10 AM at 11 Metrotech Center in Brooklyn (use the 911 Entrance). Attendance is limited to 20 people. If you are interested in attending you must register ahead of time. Please call Brian Murphy at (914) 644-4100 (W) to register.

Roger K. Sullivan Receives New York Section's Distinguished Service Award

The IEEE New York Section Distinguished Service Award is designed to recognize a New York Section member who has made a contribution of exceptional distinction that is a model for other members to emulate. The contribution shall be visible, definable, significant, sustained, and includes service to the section, industry, profession or community.

Roger K. Sullivan a long standing member of the IEEE with over 27 years of experience in the electrical distribution and transmission field has been given the Distinguished Service Award.

He was Chairman of the IEEE New York Section

- Chairman - NY/LI Joint Chapter of PES/IAS
- Chairman - METSAC
- Chairman - Tellers Committee
- Electro Director
- Vice Chairman - Power Engineering Winter Meeting in New York

He has received the following awards:

- Outstanding IAS Chapter Award as Chairman
- IEEE Centennial Medal
- Regional I Award for Enhancement of Engineering
- PES Chapters Council Award
- Region 1 Leadership Award for Design of Electric Power Systems

He has Authored or Co-authored the following publications

- "Circuit Power Cable Separation in Nuclear Power Plants"
- "Recommend Practice for Protection of Wire-Line Telecommunication"
- "Performance Requirements for Communications and Control Cables for Application in High Voltage Environments."

One of the major objectives of the IEEE is to recognize excellence and significant achievement among its members.

Roger K. Sullivan certainly meets this criteria.

The New York Section takes great pride in recognizing his achievements and high standards of excellence. It was with great pleasure that we presented Roger with the Distinguished Service Award inscribed:

Individual Member Receiving Special Recognition For Long Outstanding and Dedicated Service To The New York Section and The Institute.

New York Section Editor - at - Large...

We celebrated 'Engineer's Week' in February with a lot of rhetoric. One of the themes was 'Engineers as leaders'. The question comes up as to why don't Engineers lead more often. There are many answers and excuses. First of all there is no single voice for all engineers as there is for Doctors and Lawyers, namely AMA and ABA respectively. One of the thing we need to do is unite, another is to promote ourselves. We need a sitcom about Engineers and we need more play in the press about our great accomplishments.

The trouble is too many of the structures we have built in the past are in a state of impending collapse. Why is that? Some would say the reasons are Dollars and or Politics. But just maybe the lack of leadership in the Engineering Profession could be one of the reasons. We are a city of bridges (Great Engineering Accomplishments), but how long will it be before we have to shut them down. Unless we have some strong leadership by the year 2010 Manhattan will become an Island again.

Just how much decay and corrosion can our infrastructures take. There are safety factors that go into the calculation of loading factors of structures, but these factors do not consider decades of neglecting 'Maintenance Engineering.' We seem to fix our problems only on an emergency basis. This method can't be cost effective.

So what can we (The Engineering Profession) do about it. I don't know, but agreeing that there is a problem and that we should do something about it is a start.

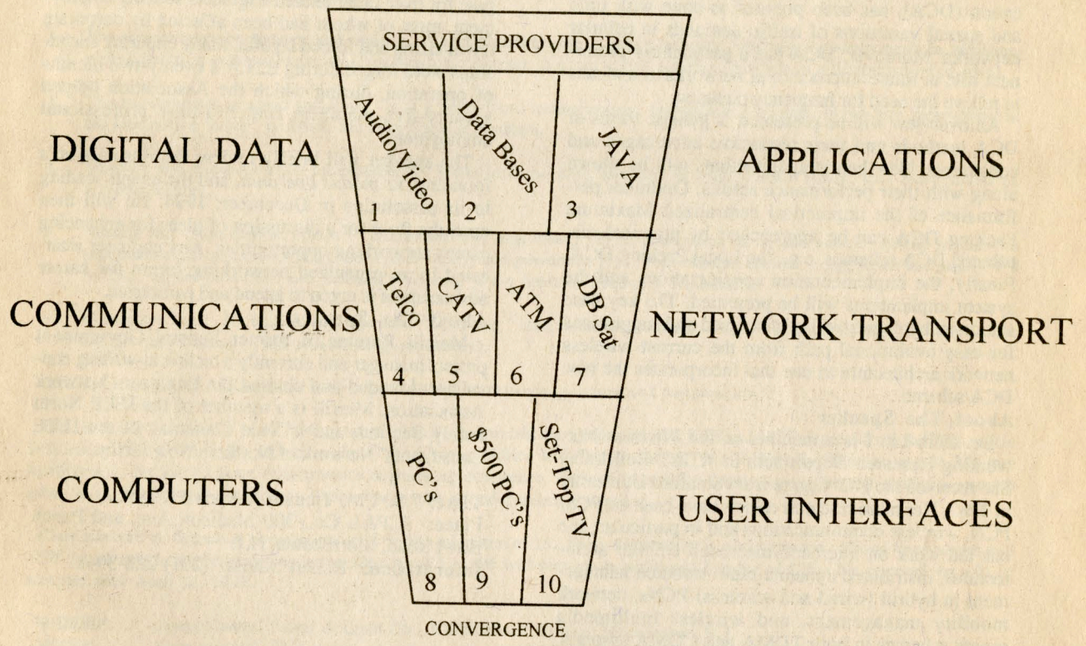
Many years ago while working in R&D as a test engineer, a prototype gyro was being tested for the first time. A group consisting of design engineers, electrical engineers, and mechanical engineers were watching it run up to speed for the fist time. Well it would not come up to synchronous speed and it wobbled. We all stood there watching in amazement and wondering what could be wrong. All specs were met. After what seemed like a long time (really only five to ten minutes) one engineer cut the power and took the gyro off the test stand and started to walk away with it. We almost said as a group "What are you going to do with it". His answer was "I don't know but I'm going to do something". Otto (I still remember his name after forty years) was a leader.

The final solution (no pun intended) was to correct the gap size between the armature and the rotor. All the machining tolerances went in the same direction and that made the gap too wide.

There are many Ottos out there just waiting for the challenge.

Your Editor-At-Large
Jim Barbera
e-mail: j.p.barbera@ieee.org

Communications Society
New York Chapter
Presents
CONVERGENCE



New York, New York

May 23, 1996

For Further Information Contact:
Mr. Frank Stahl at (718(816-5222
or
Mr. James Barbera at j.p.barbera@ieee.org
(212) 465-8877 (FAX)

NJ Communications Soc:

DISTRIBUTED DYNAMIC RADIO RESOURCE MANAGEMENT

On April 15, 1996, the IEEE NJ Communications Society together with NJIT's Center for Communications and Signal Processing will present a talk on "Distributed Dynamic Radio Resource Management In Wireless Networks." The speaker will be Dr. Chih-Lin I of AT&T Bell Labs in Holmdel. This is the second in a series of three seminars on wireless personal communications systems.

About The Talk

As an effort in enhancing system level efficiency for wireless/cellular networks, dynamic channel allocation (DCA), has been pursued to cope with time and spatial variations of traffic demands in cellular networks. Moreover, DCA has a particularly prominent role in future microcellular networks as a means to relieve the need for frequency planning.

An overview will be presented of generic forms of DCA methods and their respective advantages and constraints. New heuristic algorithms will be shown along with their performance results. Optimum performance of the impractical centralized Maximum Packing DCA can be approached by practical distributed DCA schemes, e.g., the Local Packing DCA. Finally, the implementation considerations and the system implications will be presented. The key base station technologies will be discussed and suggestions for easy evolutional path from the current wireless network architecture to one that incorporates the new DCA scheme.

About The Speaker

Dr. Chih-Lin I is a member of the Wireless Networking Research Department at AT&T Bell Labs. She received the PhD degree from Stanford University in 1987. Her main research efforts have been on PCS/PCN, wireless communications and in particular, she has led work on microcell/macrocell cellular architectures, distributed dynamic radio resource management in hybrid (wired and wireless) PCNs, network mobility management, and wireless multimedia access schemes in both TDMA and CDMA systems. She is currently the Editor for *Wireless Networks of IEEE/ACM Transactions on Networking* and a member of the editorial boards of the *Wireless Networks Journal* and the *Wireless Personal Communications Journal,* has numerous publications and holds several patents in the aforementioned fields.

All Welcome

You do not need to be an IEEE member to attend. Refreshments will be provided starting at 11:15 AM, and the talk will start at 11:30 AM.

Time: 11:30 AM, Monday, April 15, 1996.
Place: NJIT, Room 202 ECEC, Newark, NJ.
Information:
N. Ansari (201) 596-3670, ang@hertz.njit.edu; Zoran Siveski (201) 596-5710, zoran@njit.edu
WWW: http://hertz.njit.edu/~ieeenj

NJ Section PACE:

EXPERIMENT IN CAREER NETWORKING FORUM

At the April 11, 1996 meeting of the North Jersey Section's Professional Activities Committee for Engineers, speaker Mr. Merrill Rutman will discuss "The Engineers Network Association: An Experiment In A Career-Networking Forum."

About The Talk

Exchanging information with likeminded professionals, or networking, is the most effective way an individual can obtain leads to employment and career advancement opportunities. The Engineers Network Assocation (E.N.A.) was a successful experiment that provided a networking forum and professional home base for over two-hundred engineers seeking employment, most of whom had been affected by corporate down-sizing and forced layoffs. Many enduring friendships were forged during E.N.A's twenty-two months of operation, during which the Association helped seventy-five members find full-time professional employment.

The speaker will briefly review the Association's founding, its *modus operandi*, and the events leading to its dissolution in December, 1994. He will then open the floor for a discussion of ideas for enhancing career-networking opportunities. Any engineer interested in an organized networking forum for career advancement is urged to attend and participate.

About The Speaker

Merrill Rutman, a former Federal Government project manager and currently a technical-writing consultant, founded and chaired the Engineers Network Association. Merrill is a member of the IEEE North Jersey Section, and is Vice Chairman of the IEEE Consultants' Network of Northern New Jersey.

Time: 7:30 PM, Thursday, April 11, 1996.
Place: JCP&L Co., 300 Madison Ave. and Punch Bowl Road, Morristown, N.J.
Information: Robert Sinusas (201) 228-3941.

North Jersey Section IEEE AWARDS RECEPTION

The Annual North Jersey Section IEEE Awards Reception will again be held at the Birchwood Manor, 111 North Jefferson Road, Whippany. The affair is scheduled for **Sunday, May 19, 1996 from 3 to 5 PM.** Tickets are $35 each and includes a complete prepaid, two-hour open bar, hors d'oevres, buffet, and dessert. Spouses and guests are welcome. We are limited to **90** attendees, so please make your reservations early.

Reservations required by May 15, 1996. A reservation form is available in this issue of the North Jersey Newsletter for your convenience. If any additional information is required concerning the Reception, contact Anne Giedlinski at (201) 455-8556.

IEEE NORTH JERSEY SECTION SEMINAR
MICROWAVES IN INDUSTRY AND MEDICINE
WEDNESDAYS, APRIL 17, 1996 - MAY 15, 1996
JERSEY CENTRAL POWER & LIGHT CO.
300 MADISON AVENUE
MORRISTOWN, NEW JERSEY

The North Jersey Section is offering an evening seminar entitled "Microwaves In Industry and Medicine."

This seminar will consist of four weekly sessions and will concentrate on specialized applications of the microwave technology in industry and medicine. The more common uses, such as microwave cooking, speed traps, burglar alarms and communication links will not be discussed nor will predominantly military applications. Topics discussed will be:

1. Review of basic microwave techniques; the microwave spectrum, ISM frequencies; rationale for using microwaves and choice of frequency; short-range (FM/CW) Doppler radar, heating, resonance shifting; changes in signal reflection and transmission; microwave "tags" -- active, passive.

2. The measurement of distance and position. Level measurements in heavy industry; vital-signs measurements in medicine; error-correction systems; accuracy considerations; distance to a tag; piston position; position as a determination of speed.

3. The measurement of speed and flow. True ground-speed measurements; anti-collision systems; blood-flow measurements; the locomotive "creep" problem; the pilot blackout problem.

4. Moisture and metal-detection measurements. Water in an oil pipe; moisture in grain, cement slurry, etc.; metal slivers on a synthetic fiber.

5. Heating and "Non-thermal effects." Cancer therapy, angioplasty, BPH; penetration in fat and muscle; special frequencies (ophthalmic cancer); cancer diagnostics (radiometry) and prevention (?). "Non-thermal effects" -- EM fields and cancer, PO healing; animal behavior: rats, humans ("clicking"); d-c fields or frequency dependence?

6. Microwave tags. ID and security systems; "signposts;" station-keeping, warehousing. "Absence of tags" systems -- fire alarms, surveillance. Tags with existing transmitters.

Informal sessions are contemplated with opportunities for audience questions and participation.

The instructor will be Mr. Mark Nowogrodski. Mr. Nowogrodski was graduated with BEE and MEE degrees from the Polytechnic Institute of New York. He served in the U.S. Army in Africa and Europe during World War II where he was in Military Intelligence. He has 50 years of microwave engineering experience. Retired from RCA Laboratories where he headed a research group in the Microwave Technology Center, he is now an independent consultant.

Class size will be limited to a maximum of 25 with a minimum of 15. Early registration is recommended. Phone reservations will NOT be accepted. Reservations accepted after April 5, 1996 will require an additional late fee of $25. No reservations will be accepted after April 12, 1996.

WHERE: Jersey Central Power & Light Co., 300 Madison Avenue, Morristown, N.J.
WHEN: Four sessions, Wednesday evenings starting April 17, 1996, 6:30 PM to 8:30 PM
COST: IEEE Members $140; Non-IEEE Members $190
CONTACT: Mr. John Baka at (201) 455-8534 (business)

REGISTRATION "MICROWAVES IN INDUSTRY AND MEDICINE"

To: Mr. John Baka, Distribution Engineering, JCP&L Co., 300 Madison Avenue, Morristown, NJ 07962-1911

Name_____ IEEE No. _____

Affiliation No. _____ Phone Number _____

Address _____

_____

Please enclose required fee payable to **North Jersey Section IEEE**

Signature _____

NJ Communications Soc:

ANALYSIS OF HANDOFF ALGORITHMS

On April 17, 1996 the IEEE NJ Communications Society together with NJIT's Center for Communications and Signal Processing will present a talk on "Analysis Of Handoff Algorithm." The speaker will be Dr. Jack Holtzman of WINLAB, Rutgers University, New Brunswick, NJ. This is the last in a series of three seminars on wireless personal communications systems.

About The Talk

Properly designed handover algorithms are critical for the overall functioning of a cellular radio system. A model for analyzing the performance of handoff algorithms will be discussed at this meeting. This model enables evaluation of the effect of averaging and hysteresis on the handoff process. Handoffs are related to level crossings of the difference between the received signal strengths from two base stations. It is shown that algorithm performance can be well predicted by modeling the level crossings as Poisson processes with time-varying rate functions. The model is seen to yield results that agree with simulations over the range of algorithm parameters of practical interest. These results can be used to determine the averaging interval and hysteresis level that achieve the optimum tradeoff between the number of unnecessary handoffs and the delay in handing off. The results were somewhat surprising in that they used asymptotic results for level crossings. It may have been anticipated that such asymptotic results would not have been applicable in practical parameter regions. The applicability is explained. This work stimulated further work in analyzing handoff. Some of the further work will be discussed, including soft handoff as used in the IS-95 CDMA system.

About The Speaker

Dr. Jack M. Holtzman received the PhD degree from Polytechnic Institute of Brooklyn. He worked for AT&T Bell Labs for 26 years where he was Supervisor of the Mathematical Analysis and Consulting Group and then Head of the Teletraffic Theory and System Performance Department. In 1990 he joined Rutgers University, where he is Professor of Electrical and Computer Engineering and Associate Director of the Wireless Information Network Laboratory, He is also the Director of the Wireless Communications Certificate Program. His current areas of work include spread spectrum, handoffs, resource management, location estimation, propagation, and wireless system performance.

All Welcome

You do not need to be an IEEE member to attend. Free Pizza and soda will be provided at 6:15 PM.

Time: 6:30 PM, Wednesday, April 17, 1996.
Place: NJIT, Room 202 ECEC, Newark, NJ.
Information:
N. Ansari (201) 596-3670, ang@hertz.njit.edu; Zoran Siveski (201) 596-5710, zoran@njit.edu
WWW: http://hertz.njit.edu/~ieeenj

NJ Control Systems Soc.:

JUMP PARAMETER STOCHASTIC SYSTEMS

At the April 25, 1996 meeting of the IEEE NJ Section Control Systems Society, the talk will be on "Jump Parameter Linear Stochastic Control Systems And Their Opticam Control Via Lyapunov Iterations." The speaker will be Professor Zoran Gajic.

About The Talk

Jump parameter stochastic systems have been recently studied by many researchers due to their potential applications to several areas such as robotics, communication networks, optical renewal inventory and repair policies, micro and macro economics, and solar-powered receivers. These systems, very often called hybrid systems, are represented by linear continuous or discrete-time state space models whose coefficient matrices change according to discrete Markov chains. The opticam solution to the corresponding linear-quadratic control problem at steady state is given in terms of the N-coupled algebraic Riccati equations, where N indicates the number of operating modes of the given jump parameter linear stochastic systems. This talk will cover how to use the Lyapunov iterations to get the positive definite stablizing solutions of the coupled algebraic Riccati equations in terms of the decoupled algebraic Lyapunov iterations. Symptotic stability of feedback matrices corresponding to all operating system modes is established at each iteration. The presented results produce a generalization of the well known Kleinmans algorithm.

About The Speaker

Zoran Gajic is a graduate of the University of Belgrade (Dipl. Ing. and MS., both in electrical engineering) and Michigan State University (MS in applied mathematics and PhD in system science engineering). He is an associate professor at Rutgers University, Department of Electrical and Computer Engineering. His research interests include singular perturbations, linear stochastic control, differential games, output feedback, bilinear systems, weak coupling, Lyapunov and Riccati equations, jump parameter linear stochastic systems, and numerical methods. Dr. Gajic has published many journal papers and several books in the field of automatic control.

Time: 5:00 PM, Thursday, April 25, 1996.
Place: NJIT, 202ECEC, Dept. of EE., Newark, NJ.
Information: Professor Timothy Chang (201) 596-3519 or tnc0766@tesla.njit.edu

IEEE NORTH JERSEY SECTION SEMINAR
VISUAL BASIC
THURSDAYS APRIL 11 THROUGH JUNE 27, 1996
JERSEY CENTRAL POWER & LIGHT CO.
300 MADISON AVENUE
MORRISTOWN, NEW JERSEY

The North Jersey Section is offering an evening course entitled "Visual Basic." This comprehensive course is intended for novice programmers and programmers migrating from procedural languages to Visual Basic. The prerequisites for the course are a familiarity with the Windows Operating system (version 3.1 or newer), knowledge of a procedural language (i.e., Basic, C) and programming concepts, access to Microsoft Visual Basic as well as Microsoft Windows 3.1 or newer.

Upon course completion, students will understand event-driven programming; standard control objects and their associated properties, methods and events; have the ability to design application solutions.

There will be 11 weekly interactive lectures. Homework will be assigned and corrected. The instructor is Paul Mazur, a member of the staff of a large communication company and a part-time consultant and instructor in computer programming. The topics listed below will be covered.

- Introduction to Visual Basic; Naming Conventions; Creating a Graphical User Interface (GUI); Properties, Events & Methods for Forms, Text Boxes, Command Buttons and Labels; Event Procedures; Variable Declarations; Environment Options; Saving programs
- Variables & Constants; Constant.txt File; Code Modules; Expressions & Statements; Procedures & Functions; Passing data by reference or by value; Built-in Functions; Static variables; Scope of variables.
- Properties, Events & Methods for Lines, Shapes, Check Boxes, Option buttons, Frames, Picture Boxes and Images; ToolBar; StatusBar, ZOrder, Program Flow constructs, Finite Arrays, Dynamic Arrays; Control Arrays.
- Properties, Events & Methods for List Boxes and Combo Boxes.
- Properties, Events & Methods for Horizontal/Vertical Scroll Bars and Timers; DOS File commands; File Handling Functions; File System Controls (Drive Director and File List Boxes); File I/O; Common Dialog Boxes.
- Multiple Form Projects; Error Trapping & Handling; Debug Tools
- Data Manager & the Data Control; Data-aware controls; Grid Control
- Multiple Document Interface (MDI) Forms; Menu Design.
- Mouse Events; Keyboard Events; Drag & Drop; Dynamic Link Libraries (DLL).
- Clipboard; Dynamic Data Exchange (DDE); Shell Functions; DoEvents Function; Object Linking & Embeding (OLE).

Class size will be limited to a maximum of 25 with a minimum of 15. Early registration is recommended. Phone reservations will NOT be accepted. Reservations accepted after April 5, 1996 will require an additional late fee of $25. No reservations will be accepted after April 9, 1996.

WHERE:	Jersey Central Power & Light Co., 300 Madison Avenue, Morristown, NJ.
WHEN:	Eleven sessions, Thursday evenings starting April 11, 1996, 6:30 - 9:00 PM.
COST:	IEEE Members $250; Non-IEEE Members $350.
CONTACT:	Mr. John A. Baka at (201) 455-8534 (Business).

REGISTRATION "VISUAL BASIC"

To: Mr. John Baka, Distribution Engineering, JCP&L Co., 300 Madison Avenue, Morristown, NJ 07962-1911

Name_____ IEEE No. _____

Affiliation No. _____ Phone Number _____

Address _____

_____

Please enclose required fee payable to **North Jersey Section IEEE**

Signature _____

NJ PES/IAS:

WELDING WITH HOMOPOLAR GENERATORS

On April 18, 1996, the NJ Power Engineering and Industrial Application Society Chapters will present a talk on "Pulsed Resistance Welding With Homopolar Generators." The speaker will be Mike Harville of Parker Kinetic Designs (PKD) in Austin, Texas.

About The Talk

Homopolar generators are energy storage machines that convert rotating mechanical energy into a large pulse of electrical current. The low voltage, high current output of the homopolar generator has historically been used for many applications, including spot welding and electromagnetic launchers. Development is now underway to commercialize the welding process for offshore pipeline construction.

About The Speaker

Mike Harville is a senior engineer with Parker Kinetic Designs, the manufacturer of the homopolar generators. His doctoral research and subsequent work with PKD has been focused on developing and commercializing industrial applications for the generators.

Time: 7:30 PM, Thursday, April 18, 1996.
Place: Jersey Central Power & Light Co., 300 Madison Ave., Morristown, NJ.
Information: Dennis Hildenbrand (201) 366-1362.

ATTENTION NORTH JERSEY SECTION MEMBERS

At annual renewal, the IEEE has in the past few years begun to ask for two addresses for each member, both home and work. Unlike so many other intrusions these days, this is done for a good reason: we want to know where our members work, *to better serve them.* Our records show that most in North Jersey still register only their home address.

Are you working for a big company? If we can reach 100 members at a location, it makes sense to bring meetings and events there. Are you with a small company? Perhaps you're served best with strong continuing education programs because you may not get them from the jobsite.

Could you take a moment to tell us your employer's name and address? This information will be forwarded to IEEE headquarter's database, as a secondary address; you will continue to receive your mail at home.

Send your info to:
Art Greenberg
RS Microwave, 22 Park Pl., Butler, NJ 07405
Fax: (201)492-2471 a.h.greenberg@ieee.org

NJ Home Page:
http://hertz.njit.edu/~ieeenj

IEEE AWARDS RECEPTION
North Jersey Section
May 19, 1996
Birchwood Manor, Whippany, N.J.

A time to relax, unwind and enjoy—
A time to pay tribute to our New Fellows —
A time to honor our new Senior Members —
YES it's time for the Annual Section Reception

The Annual Section IEEE Awards Reception will again be held at the Birchwood Manor, 111 North Jefferson Road, Whippany. The affair is scheduled for **Sunday, May 19, 1996 from 3 to 5 PM.** Tickets are $35.00 each and includes a complete prepaid, two-hour open bar, hors d'oevres, buffet, and dessert. Spouses and guests are welcome. We are limited to 90 attendees, so please make your reservations early.

Reservations required by May 15, 1996. Complete the reservation form below and return it with your payment. If you would like tickets mailed back to you, please enclose a self-addressed **stamped** envelope. Otherwise, your tickets will be held at the door for you. If any additional information is required concerning the Reception, contact Anne Giedlinski at 455-8556.

Use this form for Reception reservations

To receive tickets in advance PLEASE ENCLOSE A STAMPED, SELF-ADDRESSED ENVELOPE. Reservations required by May 15, 1996. Mail reservation request to:
Anne Giedlinski, 299 Brooklake Road, Florham Park, NJ 07932

Enclosed is _____Please forward _____ticket(s) at $35.00 each (make check payable to **North Jersey Section IEEE**) for:

Name: _____

Address:_____Zip: _____

Internet Workshop
Understanding and Using the Internet

NJIT ITC Building, Newark, NJ
May 18, 1996 9:00 am to 4:00 pm

sponsored by
IEEE Consultants Network of Northern New Jersey

Topics

Basics	Access	Resources	Services	Applications
Overview	*Connection types & costs*	*Browsers*	*World Wide Web*	*Research*
System requirements	*Service providers*	*Viewers/players*	*E-mail*	*Education*
Terminology	*On-line services*	*Compression software*	*News groups (Usenet)*	*Business promotion*
Netiquette	*Recent developments*	*Navigation/search tools*	*File transfer (FTP)*	*Recreation*

- **Hands-on practice in small groups**
- **Vendors - door prizes - refreshments**
- **Ample parking on campus (maps will be provided)**

Special IEEE Member Prices:	***$65 Prepaid***	***$95 At the door***
Guest Prices:	***$85 Prepaid***	***$95 At the door***

☞ ***Each participant will receive a coupon for valuable Internet services.***

Seating is limited. Register Now!

Registration Form (may be reproduced)

Name _____
Street Address _____
City, State, Zip _____
Phone Number _____
IEEE Member ❑ Non-member ❑ Amount remitted $ _____
Mail form and check (payable to **IEEE-CNNNJ**) to: **IEEE-CNNNJ**
10 MacDougal Court
Waldwick, NJ 07463

For information call:
Dave Greenspan @ 201 882-8562

NJ-Signal Processing Society:

STANDARDS AND TECHNOLOGIES IN VIDEO COMPRESSION

On April 10, 1996, the IEEE North Jersey Signal Processing Chapter and the NJIT Communications and Signal Processing Center, will present a talk on "Very Low Bit Rate Video Compression: Standards And Technologies." The speaker will be Dr. Ya-Qin Zhang of David Sarnoff Research Center, Princeton, NJ.

About The Talk

Very low bit rate video coding has received considerable attention in academia and industry in terms of both coding algorithms and standards activities. In addition to the earlier ITU-T efforts on H.320 standardization for video conferencing from 64 kbps to 1.544 Mbps in ISDN environment, the ITU-T/SG15/LBC has developed a new standard H.324 for visual telephone below 64 kbps. The ISO/SG29/WG11, after its highly visible and successful MPEG 1/2 work, is starting to focus on the next-generation audiovisual multimedia coding standard MPEG 4. The first version of the Verification Model and associated core experiments have been drafted based on a large number of submissions and test results in November 1995 and January 1996. The first part of the talk will summarize these on-going standards activities undertaken by ITU-T/LBC and ISO/MPEG 4.

The second part of the talk will focus on a specific scheme that Sarnoff has developed. The very low bit rate video coder developed at Sarnoff is based on the wavelet representation, especially on the Embedded Zerotree Wavelet (EZW) algorithm. The coder consists of five main components: global motion compensation, variable-block-size motion estimation, discrete wavelet transform (DWT), significance mapping, and Zero-Tree Quantizer (ZTQ). The VLBR coder allows a wide range of compression ratios and selection of parameters. It gives a reasonable quality at 15 to 24 kbps with a resolution of 360 pels by 288 pels (CIF) at 10 frames per second. This bit rate allows real-time video telephone in the existing Public Switched Telephone Network (PSTN) at 28.8 kbps and below, and can be used for video communications in low-bandwidth environments such as wireless communications.

About The Speaker

Ya-Qin Zhang is the Head of Digital Video Communications at David Sarnoff Research Center in Princeton, NJ. His group is actively involved in the research and development of video compression algorithms and products for Grand Alliance HDTV, DirecTV, MPEG 2 codec, and video-telephone applications. He was responsible for the video compression activities in the Applications Technologies and Systems Department at GTE Laboratories Inc. in Waltham, MA, and CONTEL Technology Center, Chantilly, VA.

Election Of Officers

Officer election for the Signal Processing Chapter will be voted on at this meeting prior to the talk.

All Welcome

Free pre-meeting soda and pizza will be provided at 5:30 PM and the meeting will start 5:45 PM.

Time: 5:45 PM, Wednesday, April 10, 1996.
Place: NJIT, ECEC 202, (2nd floor conf. room), Newark, NJ.
Information/Reservations: Yun Shi (201) 596-3501 or shi@tesla.njit.edu

ELECTRO '96 - IEEE LIFE MEMBER PROGRAM

ELECTRO "96 will take place on April 30, May 1 & 2, 1996 in Somerset, NJ (five mile northwest of New Brunswick, NJ), with a full 3 days of exhibits and technical conferences. The ELECTRO Show will be held at the Garden State Convention Center, Atrium Drive (off Davidson Avenue), Somerset, NJ (Exit 6 on I-287). All Life Member activities will be held at the Double Tree Hotel, 200 Atrium Drive, Somerset, NJ (Adjacent to the Garden State Convention Center.

Life Member Lounge (Tuesday, Wednesday, Thursday)

Prominent signs will direct Life Members to our lounge, a convenient drop-in place for long time IEEE members, in a relaxing atmosphere with opportunities for renewing old acquaintances and meeting new friends. There will be special recognition, exhibit registration, and a source of information about ELECTRO '96 details.

Life Member Luncheon (Tuesday, April 30, 1996 - 12 Noon

Our usual annual Luncheon will have an interesting guest speaker. This always popular gathering will offer occasions for casual meeting of associates. The program will include some ELECTRO and IEEE staff and afford up-to-date interchange of current aspects of technology. Necessarily, our luncheon will be self-supporting. The trend of the times has reached ELECTRO '96 in the matter of spiraling costs. Therefore, there will be a charge for the luncheon of $25 per person to be arranged for you by reservation. For more information call (800) 322-9332. Or (203) 855-3019.

The New Jersey Coast Section

Proudly Presents The:

1996 Annual Awards Banquet

April 26, 1996

Molly Pitcher Hotel & Restaurant
Red Bank, NJ

Featuring our Key Note Speaker:

Victor B. Lawrence

Director Of Advanced Communications
AT&T Bell Laboratories

Honoring The 1995 Fellow Award Winners:

Hans Peter Graf
Nelson Sollenberger
Douglas Zuckerman
Stephen Walters
Linn Mollenauer
Jack Winters
Ming-Ting Sun

Honoring The 1995 Region I Award Winners:

Kazem Sohraby
Vas Kalomiris

And Honoring Our 1996 Scholarship Award Winner.

Cocktail Hour Commencing at 6:00 PM
Dinner Commencing at 7:00 PM

Ticket Price Only $25.00 Per Person

For Additional Information And Ticket Purchases:

☎G. McBride (908)699-8472 (gmcbride@notes.cc.bellcore.com)

Or Check Our Web Page!

Message From The Chairman:

Welcome to the joint newsletter from the Metropolitan Sections Activities Council, or METSAC. As I described in the March issue of the Scanner, the five IEEE sections (Long Island, New York, North Jersey, Princeton/Central Jersey, and New Jersey Coast) which form METSAC worked together this month to provide a joint newsletter so that our members may gain some awareness of IEEE activities in the other four METSAC sections. This newsletter will reach approximately 30,000 IEEE members in the New York metropolitan area. The month of April was chosen for this joint issue because ELECTRO'96, the largest electronics show on the east coast, will run from April 30 - May 2, and METSAC is one of the sponsoring organizations. So please take this opportunity to see what's happening in the other METSAC sections as well as our own NJ Coast section. In the May issue of the Scanner we will solicit your opinion as to the value of this joint newsletter.

William Wilber
Chairman, NJ Coast Section

http://www.monmouth.com/~ieee

1995 Fellow Award Winners:

Ming-Ting Sun

For contributions and leadership to the technology of video signal processing and transmissions.

Ming-Ting Sun received the B.S. degree from National Taiwan University in 1976, the M.S. degree from the University of Texas at Arlington in 1981, and the Ph.D. degree from University of California, Los Angeles in 1985, all in Electrical Engineering. After graduation he joined Bellcore where he is currently the Director of the Video Signal Processing Research Group. His research interests include video coding, video transport over heterogeneous networks, multipoint multimedia conferencing, VLSI architecture and implementation for real-time video signal processing, and adaptive filtering. Dr. Sun has been awarded 6 patents and has published more than 50 technical papers including 3 book chapters in the area of video technology. He and his group have contributed to the development of H.261, MPEG-1, and MPEG-2 video and systems standards. He was a Founding Associate Editor of IEEE TRANSACTIONS on CIRCUITS and SYSTEMS for Video Technology (TCSVT) from 1991 to 1994 and is now the editor in chief.. He was a co-recipient of the TCSVT Best Paper Award in 1993. From 1988 to 1991 he served as the Chairman of the IEEE CAS Standards Committee and established an IEEE Inverse Discrete Cosine Transform Standard. He received an Award of Excellence from Bellcore in 1987 for the team work on Digital Subscriber Line.

1995 Fellow Award Winners:

Hans Peter Graf

For development of integrated massively parallel processors and their applications to industrial pattern recognition.

Hans Peter Graf, A Distinguished Member of Technical Staff at AT&T Bell Laboratories in Holmdel, NJ is conducting research on image recognition and the implementation of machine vision algorithms on massively parallel processors. Since 1984 he has also been working on neural net models, designing microelectronic processors and leading the implementation of vision systems for industrial applications. Among Dr. Graf's theoretical work are algorithms for the hierarchical decomposition of complex images into elementary shapes. These algorithms are being used for such applications as analyzing bank checks or finding the location and identity of people in complex images. Mr. Graf received a Diploma in physics in 1976 and a Ph.D. in physics in 1981, both from the Swiss Federal Institute of Technology in Zurich, Switzerland. He is the author and coauthor of more than 90 articles on image recognition and neural networks, acted as a guest editor for IEEE Micro and for the J. VLSI Signal Processing and is an associate editor of IEEE CAS.

Douglas Norman Zuckerman

For leadership in the development of network operations and management in industry.

Doug Zuckerman is a Distinguished Member of Technical Staff in the Network Management Development Department at AT&T Bell Laboratories in Middletown, NJ. Doug has been with Bell Labs since 1969, and is currently doing network management architecture and standards planning for AT&T Paradyne's multimedia network access products. Before that, his contributions were on government networks such as the Defense Commercial Telecommunications Network (DCTN), AT&T's own corporate communications network, and operations and network management planning for AT&T's service offerings. His earlier work focused on transmission systems engineering and maintenance requirements, including standards. Doug received his bachelor, master, and doctorate degrees in Electrical Engineering from Columbia University in 1969, 1971, and 1976 respectively, and is a member of Eta Kappa Nu, Tau Beta Pi, Sigma Xi, and a Fellow of the IEEE. He currently serves on the IEEE Communications Society's Board of Governors as an elected Member-at-Large and Director of Meetings and Conferences.

Linn F. Mollenauer

For seminal and sustained contributions to the science, technology, and ultra-high-capacity communication applications of optical solutions.

Linn F. Mollenauer received a B.S.E.E. in Eng. Physics degree from Cornell University in 1959 and a Ph.D. in physics from Stanford University in 1965. In 1972 he joined the technical staff of AT&T Bell Laboratories, Holmdel, where he now heads research on ultra-long-distance, high capacity transmission using solitons in optical fibers. Dr. Mollenauer is also a fellow of the OSA, the APS, and the AAAS, and he was an IEEE/LEOS Distinguished Traveling Lecturer for 1990-1991. Other honors include the 1982 R.W. Wood prize of the Optical Society, the Bell Laboratories Distinguished Technical Staff Award, the 1986 Ballantine Medal of the Franklin Institute, and in 1991, a Rank Prize in optoelectronics.

Jack Harriman Winters

For contributions to the theory and practice of adaptive signal processing for digital communication systems.

Jack H. Winters was born in Canton, OH in September 1954. He received his B.S.E.E. degree from the University of Cincinnati, Cincinnati, OH, in 1977 and M.S.E.E and Ph.D. degrees in Electrical Engineering from the Ohio State University, Columbus, in 1978 and 1981. From 1973 to 1976 he was with the Communications Satellite Corp., Washington, DC, and from 1977 to 1981 with the ElectroScience Laboratory, The Ohio State University, where he studied adaptive antenna arrays. Since 1981, he has been with AT&T Bell Laboratories, and now AT&T Research, where he is in the Wireless Systems Research Dept. He has studied signal processing techniques for increasing the capacity and reducing signal distortion in fiber optic, mobile radio, and indoor radio systems and is currently studying adaptive arrays and equalization for indoor and mobile radio systems.

Nelson Ray Sollenberger

For pioneering contributions to TDMA-based personal communication system technology and standardization enabling a new generation of wireless telecommunications services.

Nelson Sollenberger heads the Wireless Systems Research Department at AT&T Bell Laboratories. His department performs research on wireless systems concepts and technologies including smart antennas, high speed transmission methods to support high-quality voice and multimedia services, and next generation wireless systems. Nelson received his B.S.E.E. from Messiah College (79) and his M.S.E.E. from Cornell University (81). From 1979 to 1986 he was a member of the cellular radio development organization at Bell Laboratories where he investigated spectrally efficient analog and digital technologies for second-generation radio systems. In 1987, he joined the radio research department at Bellcore, and he was head of that department from 1993 to 1995. At Bellcore, he investigated concepts for PACS, the Personal Access Communications System.

Stephen M. Walters

For leadership in the commercialization of asynchronous transfer mode networking technology, including ATM standards, specifications, and services.

Steven Walters is Bellcore's foremost authority on broadband networks and technology and is recognized internationally for his leadership. At Bellcore, he is General Manager - Broadband Business Development. Steve is the President and Chairman of the Board forthe ATM Forum. . He has served on the Board since its inception in December 1991 and played a key role in establishing the Forum and its direction. Steve was named one of the "Top Network Technology Drivers of the Year" for 1995 by Network Computing magazine for accelerating networking to a new level of capability. In 1993 he was named Bellcore Fellow, Bellcore's highest distinction, for his industry leadership in ATM. During 6 years in the United States Air Force, he installed and maintained telephone switching systems and cryptographic equipment. Steve is a Vietnam Veteran and received the Air Force Commendation Medal. Steve holds a B.E.E. degree from Auburn University, M.S. and Ph.D. degrees from Virginia Tech; belongs to Sigma Xi, Phi Kappa Phi and Eta Kappa Nu; holds eight patents; serves on several IEEE conference committees; and represents the United States on the International Switching Symposium Scientific Committee. Outside of his professional life, Steve enjoys playing classical guitar and downhill skiing with his family.

1995 Region I Award Winners:

Kazem Sohraby

For outstanding contributions to research and innovation in computer communication networks and for professional services to the IEEE.

Dr. Kazem Sohraby received his B.S.E.E. with highest distinction from Tehran Polytechnic, Iran, M.S.E.E. from the Worcester Polytechnic, Worcester, MA, and his Ph.D. in EE from the Brooklyn Polytechnic Institute, NY. He joined AT&T Bell Laboratories in 1983, and currently is with the Performance Analysis Department. His areas of interest include: broadband networking, circuit and packet switching, and wireless communications. Dr. Sohraby spent part of 1992 with the Mathematics of Networks And Systems Department, Mathematical Sciences Research Center, AT&T Bell Laboratories Murray Hill, NJ. He is a senior member of the IEEE, member of ACM, Editor of IEEE Communications Magazine, Editor of Journal of Computer Networks and ISDN systems, Editor of Wireless Networks Journal, referee for the NSF Networking and Communcations Program and for Natural Sciences and Engineering Research Council of Canada. Dr. Sohraby serves as the Chairman of the IEEE Infocom Conference in 1996. He is the coauthor of a recent book "Control and Performance of Packet, Circuit, and ATM Networks" published by Kluwer Academic (Boston) 1995.

Vasilios E. Kalomiris

For Managerial excellence in the organization, leadership, design, and development of militarized fiber optic connectors.

Vasilios E. Kalomiris is the Project Manager for Commercial Communications Technology Laboratory (C2TL) in the Special Project Office of Space and Terrestrial Communications Directorate of CECOM, US Army. His main contributions include the establishment of C2TL and the testbed for selected promising commercial products and their integration into legacy systems. He is also the project leader for the ARPS sponsored multiyear project on Commercial Communications Technology Testbed focusing on providing state of the art portable products such as personal digital assistants from Apple, global positioning devices from Trimble, and digital trunked land mobile radios from Ericsson to support dismounted soldier operation. Immediately after graduation from NYU with an MSEE, BSEE, and BA in Mathematics he served as a communications engineer for the Hellenic Telecommunications Organization. Mr. Kalomiris has also authored and presented numerous technical papers for domestic and international conferences.

Trenton Computer Festival

World's Longest Running Personal Computer Show

Saturday & Sunday, April 20-21, 1996

Saturday: Flea Market 9 a.m.

Show 10 a.m., until 6 p.m.

Sunday: Flea Market 9 a.m.

Show 10 a.m., until 4 p.m.

Mercer County Community College

Come to the largest personal computer flea market with 1000 vendor spots and more than 225 indoor Commercial Booths.

National Exhibitors include UCR of Princeton, McGraw Hill, Visitron, BC Computing, Fractal Design, Hauppage Computer, IBM, Intel, Intuit, Lexmark, Microsoft, Netcom, Novell, *and many, many more!*

- More than 125 seminars, forums and talks by *leading experts*.
- Saturday evening banquet.
- Keynote speaker on Saturday afternoon and Saturday evening banquet.
- Food & Refreshments.
- User group meetings open to all attendees.
- FREE Shuttle Bus to and from parking area.
- FREE Purchase Pickup - leave purchases with TCF staff while you get your car.
- More than 20,000 people expected!!!

Sponsoring Organizations

ACGNJ - your host, Trenton State College, Mercer County College, IEEE, CJCC, NYACC, PHUG

Admission

Only $8 for both days, $5 for a Sunday-only ticket. Students and senior citizens are only $5 for both days. Children under 12, accompanied by an adult, are free on Sunday. Preschoolers are free on both days.

About the Show

The largest personal computer flea market with more than 1000 vendor spots. The Trenton Computer Festival was the first personal computer show to be held. The flea market is an outdoor space (on asphalt) and spaces are reasonably priced so that individuals as well as commercial vendors may take advantage of this very popular part of TCF.

The TCF flea market area is famous for having acres of bargains on everything from used to brand new. You'll often overhear people talking about what a great price they got on the latest widget.

More than 225 Indoor Commercial Booths.

These booths feature new hardware and software at prices that are often better than mail-order. You'll also get a chance to see the equipment in operation before you buy. TCF has traditionally been a show where the vendors cut their prices to the bone, as they compete for your buying dollar.

National Exhibits

These national exhibitors come with their experts to answer your questions, introduce new products and demonstrate existing products. Over 125 Seminars, Forums and Talks by *leading experts*. This is your chance to head the industry's leading experts present programs on the latest computer topics and at all levels from beginner to advanced. Come learn about Multimedia, the Internet, CD-ROM, Virtual Reality, Desktop Publishing, Word Processing, Networking, CAD, Graphics, Business Applications and many more.

Also, meet with users groups that cover just about every interest including PC, Macintosh, Apple II, Amiga, Unix and Amateur Radio. You can even get your amateur radio license at TCF!

Saturday Evening Banquet

A long-time favorite of those in-the-know, the Saturday evening banquet is an enjoyable get-together where vendors, staff and attendees mix and discuss the successes of the day over a pleasant meal and speaking platform. This year's scheduled Keynote will be Bill Machrone of *PC Magazine.* Past speakers at the banquet have been Bill Gates (Microsoft), Gordon Eubanks (Pres. & CEO of Symantec), Paul Grayson (CEO, Micrografx), Steven Levy (contributing editor MacWorld Magazine) and similar notables. The evening concludes with door prizes.

Food & Refreshments

Refreshment stands are located in many outdoor locations so you are never very far from one and lines are kept to a minimum. Food may also be purchased inside in the Cafeteria, strategically located between two of the hottest commercial booth areas in the Student Center.

More Info via Internet!

You can get the latest information on TCF by requesting information via Internet E-mail. Just send an Email message to TCF.info@edit.com and you will get details about the festival, including updates as the festival draws near, or check in with the Trenton Computer Festival World Wide Web Home Page:

http://www.dorsai.org/fair

You can call 717-529-6134 or write Jeanne or Glenn Eckman, TCF'95, PO box 129, Kirkwood, Pa 17536-0129.

Princeton ACM / IEEE-CS Chapters

April 1996 Joint Meeting

Java: The New Language For Internet Applications

by

Dennis Mancl

Abstract...

Java is a new programming language and environment developed by Sun Microsystems. It can be used to write stand-alone applications, and it can be used to create "applets": small program fragments that can be run under the control of an Internet World Wide Web browser. The Java language is object-oriented and its compiler is designed to generate architecture-neutral intermediate code that can be either translated to machine code or interpreted. This talk will include demonstrations and a basic tutorial on the Java language and environment.

About the Speaker . . .

Dennis Mancl is a member of the object-oriented technology consulting group at Bell Labs (now part of Lucent Technologies, the telecommunications spin-off from AT&T). He received his Ph.D. from University of Illinois for work in programming languages for parallel computers. He has been working for the last fourteen years in various parts of AT&T, in factory automation, C++, and object oriented technology.

When: Tuesday April 16, 1996,
Time: 8:00 p
Where: David Sarnoff Research Center Routes 1 and 571, Princeton, NJ
Info: Information: call information number (609) 924-8704,| Dennis Mancl (908) 582-7086, or Rebecca Mercuri (609) 895-1375

Join us for a pre-meeting dinner with the speaker at 6:00 p.m. at the Rusty Scupper on Alexander Road in Princeton. If you would like to attend, please call the information number to record your reservation on the answering machine.

HELP NEEDED AT ELECTRO '96

ELECTRO returns to the metropolitan New York area after a three year absence, and it promises to be better than ever. The exhibitors and technical program are more reflective of the current new products than ever before. There are more reasons to attend than there have been in the past.

One of the key elements to the success of ELECTRO '96 is the strong support given by the sponsoring organizations: IEEE, Region 1 / METSAC & CNEC, and the New York and New England Chapters of the Electronic Representatives Association. There is a strong level of participation by the IEEE members in the Technical Program side of the show, but there is a need for additional volunteers to help in the preshow activities. One area is the Attendance promotion. People who are willing to distribute the FREE VIP Registration passes are most welcome.

Another area where volunteers are most welcome is the Exhibits Committee. This group works at the Show site to help with the logistics involved with the booth erection, the movement of the crates, and the myriad of questions involved with the trying to get the lights turned on, the phones installed, etc. This group doesn't lift, tote, push, pull or otherwise handle the crates, but they do provide help to the exhibitors in their setup activities. It's a real education unto itself.

If you are interested in offering to help in any of these areas, or just want to find out more about it, please contact any of the following:

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PULSE Deadline

for **May** *is*

March 31

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