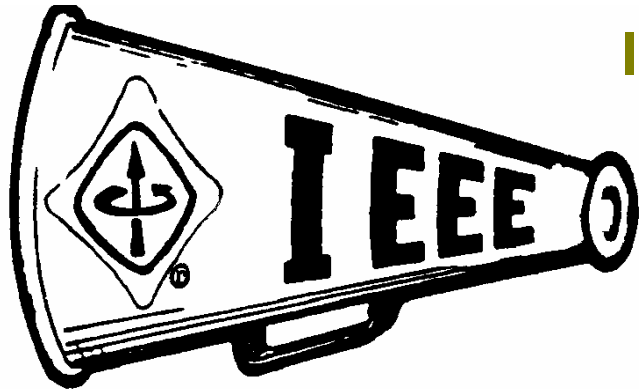


The Valley Megaphone



Newsletter of the
**IEEE – Institute of Electrical and
Electronic Engineers, Inc.**
Phoenix Section
March 2003, Volume XVII, Number 3

Executive Committee

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Open

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This Issue of Valley Megaphone Features:

Contacts and Links

Executive Committee (page 1)

Chapters and Branches (pages 1 and 2)

Student Branches (page 2)

Announcements:

EMC Society Meeting (page 2)

CPMT Society Meeting (page 3)

**ASU IEEE Week and Student-Faculty-Industry
Mixer (page 4 and page 5)**

Consultants Network Meeting (page 5)

Computer Society Meeting (page 6)

**IEEE Senior Member and Fellow Grades (page 7)
Graduate of the Last Decade (GOLD) Affinity Group
(page 7)**

Power Engineering Society March Meeting (page 7)

Volunteer Needed for Membership Chair

IEEE Phoenix section is seeking nomination for membership chair for 2003. Being an officer helps you to improve your leadership skills in addition to serve the local technical community, network with colleagues both at local and national level. It is also a stepping stone for getting involved in national level technical organizations. If you are interested or you know someone that is interested in this opportunity, please contact section chair James E. Drye at 480-413-5685 or Jdrye@ieee.org. You must be an active member of IEEE for this position.

Executive Committee contd..

Awards

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.....Contd... on page 2

The Valley Megaphone is the newsletter of the Phoenix Section of the Institute of Electrical and Electronics Engineers. Published Monthly, September through June. The publication reaches about 4000 members. Submit articles, advertisements, and announcements to Shamala Chickamenahalli at the above email address or by Fax to 480-554-7615. Deadline for announcements and advertisements is the third Friday of the month prior to publication. Advertising Rates: Full page:\$200, 3/4page: \$125, 1/2 page: \$75, 1/3 page:\$50,1/4 page:\$25. Change of address/email? Call toll free 1-800-678-IEEE. Please allow 6-8 weeks. Section Web Page is : <http://www.ieee.org/phoenix>



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IEEE ANNOUNCEMENTS

Chapters & Branches

Contd.. from page 1

Power Engineering Society

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bajarang.agrawal@aps.com

Waves & Devices Society

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GOLD

Vasu Atluri, 480-554-0360
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Student Branches

ASU Engineering Student Branch

Chair: Maziar Brumand
Maziar.Brumand@asu.edu
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ASU Computer Society Chapter

Chair: Kalyan Chamarthi
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Advisor: Joseph Urban, 480-965-3374,
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ASU Engr. Tech Student Branch

Chair: Esaki Soundarajan
Esaki.Soundarajan@asu.edu
Advisor: Dr. Raji Sundararajan, 480-727-1507
Raji@asu.edu

DeVry Student Branch

Chair: Chris Leno, chrisleno@ieee.org
Advisor: Gary Bryan, 602-870-9222
gebryan@devry-phx.edu

DeVry Computer Society Student Branch

Chair: Christopher Roan, chris_roan@computer.org
Advisors: Terri Barnes, 602-870-9222
tbarnes@devry-phx.edu, Diane Smith
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NAU Engineering Student Branch

Chair: Lamont Serbousek lgs6@dana.ucc.nau.edu
Advisor: Peter Blakey, 928-523-3493
Peter.Blakey@nau.edu

NAU Computer-Society Student Branch

Chair: Billy Olsen, wdo@dana.ucc.nau.edu
Advisor: Phil Mlsna, 928-523-2112
Phillip.Mlsna@nau.edu

Embry-Riddle Student Branch

Chair: Brook Heiling, bheiling@heitek.biz
Advisor: Steve Chadwick, 928-777-6980
chadw202@erau.edu

Embry-Riddle Computer Society Student Branch

Chair: Andrew Soroker, sorok3b8@erau.edu
Advisor: Susan Gerhart, (928) 777-3882
gerharts@erau.edu

Electromagnetic Compatibility Society

April Meeting Announcement

Date: Thursday, April 3rd, 2003

Place: Garcia's Mexican Restaurant at Embassy Suites Hotel

Address: 4400 South Rural Road, Tempe, Arizona

Address: Just South of U.S. 60 on West side of Rural Rd.

Time: 5:30PM Social, 6PM Dinner (order off menu), 7PM Meeting and Presentation

Title: Signal Integrity in Measurement Systems

Speaker: Bruce Wallick, Field Applications Engineer for Tektronix

Abstract: Digital signal integrity is about distributing signals from one part of a digital circuit to another in a way that deterministically and dependably delivers the digital information contained therein. Ensuring adequate Digital Signal Integrity requires specific analysis in the design phase and characterization by empirical measurements of prototypes to validate the effectiveness of the design modeling methods.

In order to assure that the measurements are valid, a lot of detail must be paid to connection and probing techniques, bandwidths of the probes and instruments, and methods for investigating the true nature of "digital" signals. This presentation will discuss the latest methods for measuring high accuracy digital and analog signals, and methods to use high bandwidth analog measurements to determine why some digital signals yield unpredicted results.

About the speaker: Bruce Wallick has been making precision measurements since enlisting in the U.S. Navy in 1977 where he specialized as a Metrology Technician. His BSEET was earned at the University of Massachusetts at Lowell. He has 20 years experience in RF & Microwave testing and has been characterizing high speed pulse circuits constructed in GaAs, bipolar and SiGe technologies for 11 years at companies like Vitesse Semiconductor, Analog Devices and Teradyne. Bruce has brought this industry experience to bear as a Field Applications Engineer for Tektronix since December, 2001.

Please check out our web site at

<http://www.ewh.ieee.org/r6/phoenix/phoenixemc/index.html> for the latest information on upcoming talks!



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COMPONENTS, PACKAGING AND MANUFACTURING TECHNOLOGY SOCIETY

Intel's 90 nm Logic Technology

Mark Bohr

Intel Senior Fellow and Director of Process Architecture & Integration
Intel Corporation, Hillsboro, Oregon.

ABSTRACT

The semiconductor industry continues down a path of introducing new process technologies about every 2 years. Each new technology generation provides roughly a 2x increase in transistor density and ~50% increase in transistor performance. The key features of Intel's next generation 90 nm logic technology will be described, including the use of strained silicon transistors with a 1.2 nm thick gate oxide, 7 layers of copper interconnect with a new low-k dielectric, and a 6-T SRAM memory cell with an area of 1.0 μm^2 . Some of the issues encountered in packaging high performance microprocessor chips will also be discussed.

BIOGRAPHY

Mark Bohr received M.S. degree in electrical engineering in 1978 from the University of Illinois, Champaign-Urbana. He joined Intel's Portland Technology Development group in 1978 and has been responsible for process integration and device design on a variety of process technologies including recent 130 nm and 90 nm logic technologies used to make Intel's high performance microprocessors. He is an Intel Senior Fellow and Director of Process Architecture & Integration and is currently directing development activities for Intel's 65 nm logic technology. He is the general chair for Intel Process Technology Conference. He has published 29 technical publications, offers two technical short courses at IEDM, and holds 21 patents.

Date: Tuesday, March 25th, 2003.

Location: Motorola, 2100 E. Elliot Rd., Tempe, AZ (Group Conference Room).
(Entrance to the facility through the main (south) lobby by the flagpoles. You will be escorted to the Conference Room.)

Time: 5:30-6:00 p.m. - Social/Refreshments; 6:00-7:00 p.m. - Presentation
7:00 p.m. Dinner

(IEEE members and non-members are welcome. Refreshments, pizza and soda provided by CPMT Society Phoenix Chapter.)

For more information, please call any of the following officers:

Mali Mahalingam, Motorola (480) 413-5368
Rao Bonda, Motorola (480) 413-6121
Eric C. Palmer, Intel (480) 554-8710
Sam Karikalan, Primarion (602) 659-4634
Ravi Sharma, Microchip (480) 792-7920
Vasu Atluri, Intel (480) 554-0360



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ASU IEEE Week and Student-Faculty-Industry Mixer Welcomes All

On **Friday, March 28, 2003**, the ASU IEEE Student Branch will host their Spring 2003 traditional *IEEE Student-Faculty-Industry Mixer* from **2-6 pm, outside Old Main** <http://www.asu.edu/tour/main/main.html>
– located on the ASU main campus: 400 East Tyler Mall, Tempe, AZ 85281, (480) 965-2586, Parking is available in ASU visitors lots <http://www.asu.edu/dps/pts/maps/asumap.html>. Everyone is welcome to attend the Mixer!

IEEE Student-Faculty-Industry Mixer. Mixers are well attended. Over 200 attended the last few mixers. Attendees include students from across engineering, computer science, the college of business, mathematics, and the sciences. Many companies are expected to attend.

The purpose of the mixer is to promote true interaction between students (undergraduate and graduate), university faculty, and engineers/scientists/recruiters from industry. The mixer is intended to provide students with opportunities to:

- Learn what industry expects of its prospective employees who graduate from science and engineering programs.
- Discuss future coursework with colleagues, faculty, and industrial representatives. The goal is for students to become aware of those skills they will need upon entering the job market (e.g. technical writing and reading, verbal, presentation, etc.)
- Develop professional ties.
- Learn about the benefits of membership in IEEE and other professional organizations.
- Discover career and pre-career industrial programs with practicing engineers, scientists, business leaders, and recruiters. These include summer internships, cooperative education programs, part-time employment, and full-time employment. Students apply for these programs by submitting resumes.
- Discuss senior design projects, undergraduate research projects, and graduate school with one another, faculty, and industrial representatives.

Companies that have attended previous mixers include: AG Communications, Altera, Andersen Consulting (now Accenture), Boeing, Dollarhide Mass Mutual, Exxon, Honeywell, Hughes, IBM, Intel, Integrated Information Systems, International Rectifier, Lockheed Martin, Medtronic, Microsoft, Mobilian, Motorola, National Instruments, Nextel, Orbital Sciences, ONSemiconductor, Raytheon, Schlumberger, Sundstrand Aerospace, and TDK Systems.

Mixing at the Mixer. Mixers provide students with a chance to interact with faculty at the mixer in an informal friendly setting. Faculty members offer guidance on courses, career options, and everyday issues.

The mixer provides students with an excellent opportunity to discuss summer internships, full-time positions, general career options, company initiatives, and the latest technologies with representatives from major corporations. Company representatives provide students with information regarding company requirements, needs, and expectations. They often provide students with useful advice on resume preparation, on minor selection, and even on specific course selection. Some students are presented with career opportunities that they were completely unaware of. Company representatives collect student resumes. Many students have received (and accepted) job offers as a result of submitting their resume at the mixers. Companies have found the mixers to be a great place for initiating the recruitment process.



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Other mixer amenities have included an all-you-can-eat buffet, beverages, a live DJ, and very “cool” - industry donated - door prizes (e.g. walkie-talkies, shirts, sweatshirts, duffle bags, microprocessors, cash, etc.). The door prize raffles are always a lot of fun – generating tremendous crowd enthusiasm – particularly when the prize is cash!

Increasing IEEE Branch Membership.

Last year, the ASU IEEE Student Branch was ranked 13th in the world in terms of membership – just behind top schools such as the Georgia Institute of Technology (ranked 1st), University of Texas-Austin (ranked 3rd), Stanford University (ranked 5th), Texas A&M (ranked 6th), University of California-Berkeley (ranked 9th), and Purdue University (ranked 10th). The branch hopes to significantly increase its membership to move it into the top five (5). To Join ASU IEEE, please visit the following website:

<http://www.eas.asu.edu/~ieec/style1/membership.shtml>.

ASU IEEE Branch Officers and Funds. Many have helped to plan *IEEE Mixer*. The branch officers - Maziar Brumand (Chair), Anouar Zine (Vice-Chair), Merrill Jordan (Secretary), Rouzbeh Brumand (Treasurer), Christel Amburgey (Publicity), Jay Knobloch (Activities) and Eric Cope (Web Master) – worked very close with one another, industry, and their branch advisor, Professor Rodriguez. IEEE Mixer funds are used to support student activities and projects in the *area of Flexible Autonomous Machines operating in an uncertain Environment (FAME)*. FAME is an all-encompassing multidisciplinary theme that includes projects in robotics, embedded systems design, intelligent systems, guidance, navigation, and controls.

Additional Information. For additional information about the upcoming *IEEE Student-Faculty-Industry-Mixer*, the ASU IEEE Student Branch, and sponsoring branch activities, visit their award winning web site at <http://www.eas.asu.edu/~ieec/> or contact the branch advisor, Professor Armando A. Rodriguez at aar@asu.edu.

Consultants Network Announcement

The next meeting of the IEEE Phoenix Area Consultants Network will be held on Thursday, March 13 at Monti's La Casa Vieja at the southwest corner of Mill Ave and Rio Salado Parkway in Tempe. Networking and the social hour begin at 6:30 with dinner starting about 7 PM. Vaughn Treude and Dale Retter will present the program, “Fab4 Linux – A New User Interface Paradigm”. Vaughn is an independently employed software engineer and a long time and very active member of the Network. He has been doing a lot of work in Linux recently, and he and Dale have been working together on Fab4. Many of us have heard of Linux but don't know a whole lot about it. This is our chance to correct that deficiency. Everyone is welcome. If you want to skip dinner, just come around 8 for the program. There is no charge for the program, and dinner is only \$10. Please let us know by sending an email to peverett@everettinfrared.com if you are planning to come so that we can make sure that Monti's sets aside a large enough room for us.

Last month Ed Mischen talked to us about “Trademarks and Copyrights”. He will continue with the second half of the intellectual property series in April when he talks about patents. Upcoming programs include “Electric Windmills” and “Programmable Analog Gate Arrays”.



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Communication Trends and Technologies

SPEAKER: Randy Brown **DATE: 6:00 Tuesday March 25**

LOCATION: DeVry University, 2149 West Dunlap Ave, Phoenix, Az 85021 (1 mile east of I-17 on Dunlap, SE corner of 22nd Ave and Dunlap)

Randy Brown, Product Manager of Enhanced Business Services at AG Communication Systems will discuss emerging wireline and wireless communication technologies and protocols and the enhanced services they will help usher in. The telephone in your home and circuit it is on, has not fundamentally changed in the last 75 years. This is all about to change. Randy will talk about new technologies, telephone companies are already deploying. VoIP (Voice over IP (Internet Protocol)) allows many phones to share the same wire, using Internet Protocol. VoIP can be configured so each phone has its own ID (i.e., telephone number), so you can take your phone with you and plug it in anywhere.

Randy Brown has been with AG Communication Systems, a subsidiary of Lucent Technologies, for over 23 years in various engineering, standards and systems engineering roles. He is currently a Product Manager for Enhanced Business Services, a feature server for VoIP (Voice over Internet Protocol) products being developed at AGCS.

See www.ieee.org/phoenix/compsociety, for more information.

Contact Bob Bianca (Bob.Bianca@computer.org) or Diane Smith (Diane@fuseki.com).

Computer Society: The Computer Society's first meeting of the year was great success. Seventy five (75) people came to hear Dr. Robert Smith's talk on Computer Security. For those who could not attend, Dr. Smith's slides will be posted on our website (www.ieee.com/phoenix/compsociety). Thank you, to all the people who supported us by attending meeting and helping get out the word about the meeting. Pinkesh Shah is our new Treasure and Rick Stacio is our new Webmaster. On **Tuesday March 25, Randy Brown will discuss Communication Trends and Technologies**. The core of the telephone network is constantly evolving. Network bandwidth has increased exponentially and cost has dropped likewise. But, the "last mile" between your home or business and the telephone company's central office, has barely changed in a hundred years. It is the bottleneck that limits how much of the network's capacity can be delivered to you. Well, telephone companies are beginning to change out the "last mile" and dramatically increasing the services they can provide. Randy is a leader in providing those changes and will us all about the new technologies.

On **Tuesday April 22, Rajeev Arora will discuss Java and E-collaboration**. Electronic communications today are based a two way voice telephone system that was started in the late 1800s and one way television broadcasts that were started in the late 1940s. E-mail is the web analog of telephone and HTTP is the web analog for TV. Rajeev sees totally new paradigms. He will talk about "Instant Meeting" a collection of new technologies for sharing: whiteboards, documents, voice, and notes over vast distances.

Both meetings will be held at DeVry University (2149 West Dunlap Ave, Phoenix, Az 85021 (1 mile east of I-17 on Dunlap, SE corner of 22nd Ave and Dunlap). More information about both talks are posted on our website (www.ieee.com/phoenix/compsociety).

Wanted: Company Liaisons – The IEEE Computer Society needs a Company Liaison at each business/school with computer professionals to post flyers for upcoming meetings. Each month, I will email meeting flyers to the liaisons, who print out a few copies and post them around their building. The volunteer position requires about 15 minutes a month of your time. If you able to serve (or have an administrative assistant who can help), please email Bob.Bianca@computer.org.



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IEEE Senior Member and Fellow Grades

All IEEE Phoenix Section Members interested in getting nominated to Senior Member or Fellow Grade, please contact Vasu Atluri by telephone at (480) 554-0360 or by email at vpatluri@ieee.org. Please refer to www.ieee.org for more information related to senior member and fellow grades.

IEEE Phoenix Section Graduate Of the Last Decade (GOLD) Affinity Group

Volunteers are needed to serve as officers for IEEE Phoenix Section Graduate Of the Last Decade (GOLD) Affinity Group. Volunteers should be active IEEE members from IEEE Phoenix Section who have obtained their first professional degree, preferably a Bachelor of Science in Engineering, within last decade. If interested, please contact Vasu Atluri by telephone at (480) 554-0360 or by email at vpatluri@ieee.org. Please refer to www.ieee.org for more information related to GOLD Affinity Group.

Power Engineering Society March Meeting

March 13th Meeting:

Time: Registration: 11:30, Lunch 12:00 Noon, Program 12:30 PM

Place: Wyndham Phoenix Airport, 427 N 44th Street, Phoenix

Cost: \$12.00

Speaker: Paul Harrington, from the Office of License application and Strategy at the Yucca Mountain Project, DOE

Topic: The US Congress approved Yucca Mountain, Nevada as the first long-term geologic repository for spent nuclear fuel and high-level radioactive waste on July 8, 2002. Current work is transitioning from the site characterization phase to the preparation of the license application. Mr. Harrington will discuss the remaining process that needs to be accomplished before actual storage of nuclear waste products will begin coming to the repository.

For reservations please contact Raja Ayyanar or Angela at the above contact numbers before Noon, Monday March 10 2003.