



IEEE

GRID.pdf

September 2004

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Chapter Meetings and Events

SCV-CNSV - 9/3: **Entrepreneurs Special Interest Group** - meets most weeks on Friday afternoon. You are invited to attend ... [\[more\]](#)

SCV-CPMT - 9/8: **"Alternative Packaging Technologies for 3-D Packaging"** - the need for higher speed, smaller form-factors, and lower cost are driving system packaging to explore the third dimension ... [\[more\]](#)

SF-PES - 9/8: **"Improving Utility Business Processes and Workflow Through Cost-Effective Business Integration Initiatives"** - applying proven advances in business process management and workflow automation in a quest for improved performance ... [\[more\]](#)

SCV-MTT - 9/9: **"Microwave High Power Device Measurements in an Isothermal Environment"** ... isothermally testing high power devices using pulsed RF and pulsed bias will be described ... [\[more\]](#)

SCV-SP - 9/13: **"Anytime, Anywhere IP Communications"** - convergence of voice, video and data onto a single infrastructure is delivering new opportunities in the way we work, live, play and learn ... [\[more\]](#)

SCV-ED - 9/14: **"MEMS: Moving into the Mainstream"** - The growing momentum toward wireless internet access, sensor networks, and RF tags promises to pull MEMS technologies into the mainstream ... [\[more\]](#)

SCV-EMC - 9/14: **September Social & Discussions** - No presentation is scheduled, but discussions will likely cover the recent EMC Symposium and reactions to its talks - bring your own views and impressions ... [\[more\]](#)

SCV-EMB - 9/15: **Presentation on Boston Scientific Corp and a tour of the BSC Fremont Facility** - RSVP required -- room for 25... [\[more\]](#)

SCV-SSC - 9/16: **"Next-Generation Compact Modeling"** - Moore's Law scaling has led to ultra-short channel length devices with multi-GHz performance and a host of new challenges for nano-meter scale... [\[more\]](#)

SCV-CNSV - 9/21: **"Reliability Tools and Integration for the Manufacturing Phase"** - most of the reliability effort is spent in the design phase - improving reliability during the manufacturing phase ... [\[more\]](#)

OEB-IAS - 9/23: **"Changes in Industrial Power Management Systems"** - changes in power management are being driven by PC operating systems: integration into computer systems & through the Web ... [\[more\]](#)

OEB-COM - 9/23: **"Real-World Experience with a Mobile Broadband Network"** - performance and deployment are evaluated with stationary, pedestrian and vehicular mobility ... [\[more\]](#)

SCV-PSES - 9/28: **"Central Office Power & Ground Requirements and Design Solutions"** - a close look at bonding and grounding, from definitions to regional implementations; power considerations ... [\[more\]](#)

SF-IAS - 9/28: **"Interrupting Capacity and Short-Time Current Ratings"** - ratings of molded-case, insulated-case, and low-voltage power circuit breakers and their effect on time-current coordination ... [\[more\]](#)

SCV-EMS - 9/29: before-dinner talk - **"The Art of Commitment and The Science of Change"** - a forum on conquering corporate change ... after-dinner talk - **Walking A Tightrope with Resilient Packet Rings - A Startup Story** - insights to guide developers in anticipating changes and planning workarounds in the midst of changing requirements ... [\[more\]](#)

Upcoming Conferences in the Bay Area

Sept 1-5 - San Francisco - EMBC'04

IEEE Int'l Conference on Engineering in Medicine and Biology [\[more\]](#)
Sessions, Workshops, Tutorials, Seminars

Sept 12-15 - Santa Clara Hilton

IEEE Int'l SOC Conference Systems-on-Chip systems, architectures, circuits [\[more\]](#)

Sept 21-23 - Anaheim - WESCON'04

Wescon, NANOWorld, Enterprise Integration EXPO, exhibits [\[more\]](#)

Sept 27-30: Santa Clara Convention Center

GSPx: the International Embedded Signal Processing Conference and Exhibition ... Includes Executive Summit, sessions and workshops [\[more\]](#)

Sept 30 - Oct 2: Stanford Univ

Engineers for a Sustainable World National Conference -- Solutions for a Shrinking Planet: Sustainable Engineering and Enterprise for Human Development - technologies and social/cultural concerns, environmental issues. [\[more\]](#)

Oct 4-7: Santa Clara Marriott

SECON'04: Sensor & Ad Hoc Communications and Networks -- Distributed arrays of devices & sensors - applications - tutorials, technical sessions [\[more\]](#)

Oct 18-21: Stanford Sierra Camp

IEEE IRW: Integrated Reliability Workshop - at Fallen Leaf Lake - ensuring semiconductor reliability through component fabrication, design, characterization, and analysis tools; reliability of deep sub-micron, high speed devices [\[more\]](#)

Oct 25-29: San Jose Hilton

BroadNets'04: International Conference on Broadband Networks -- next-generation Optical and Wireless broadband networks with ultra-high bandwidth. [\[more\]](#)

Call for Papers: **ISQED'05** [\[more\]](#)

Upcoming Courses:

Quality Engineer Exam Prep class [\[more\]](#)

Pb-Free Solder: Reliability Issues [\[more\]](#)

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Conference Calendar [pages 27-28](#)

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IEEE **GRID** is the monthly newsmagazine of the San Francisco Bay Area Council of the Institute of Electrical and Electronics Engineers, Inc. As a medium for both news and opinion, the editorial objectives of IEEE **GRID** are to inform readers in a timely and objective manner of newsworthy IEEE activities taking place in and around the Bay Area; to publish the official calendar of events; to report on IEEE activities of a national and international scope; and to serve as a forum for comment on areas of concern to the engineering community by publishing contributed articles, invited editorials and letters to the editor.

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From the editor . . .

Dear Editor,

How do I know about upcoming Conferences and Calls for Papers?

Thanks,

Ramesh Chitor, IBM, Menlo Park

I get a number of email messages each month asking for advice about “navigating” the IEEE. Since I’ve been an active local and international Member for over 30 years, I have a lot of insight into how IEEE operates and were to find information.

The IEEE is a diffused Institute, broken down into nearly 40 “special interest groups” (we call them Societies) and also into geographic units (Chapters reporting to Sections, to Councils, to our Region 6). It can be very confusing.

So, to answer the question posed by Ramesh, here are several sources I can suggest to you:

- First, most of you belong to one or more Societies. Check their Magazines or Newsletters for upcoming events of interest to you. Review their Conference Calendar and the one-page CFPs and Notices there.
- If you don’t belong to a Society but want to track their conferences, visit their websites occasionally. You can find the listing at www.ieee.org/organizations/tab/society.html.
- This is great for events around the world, but what about just for the Bay Area? For this, use the IEEE’s search feature: www.ieee.org/conferencesearch/. You can limit the search to California and even to one specific Society (eg, Communications). You’ll always find a web link to each event.
- And we have a limited listing of upcoming local conferences in our **GRID.pdf** Calendar toward the end of each issue; see it on page 29. The events highlighted in the **e-GRID** are our paid advertisers, and we especially encourage you to check these out, too.

Send me your opinions on what we’re doing!

Paul Wesling editor@e-grid.net

NOTE: This PDF version of the IEEE **GRID** – the **GRID.pdf** – is a monthly publication and is issued a few days before the first of the month. It is not updated after that. Please refer to the Online edition and Interactive Calendar for the latest information: www.e-GRID.net

26th Annual International Conference of the
**IEEE Engineering in Medicine
and Biology Society**

September 1-5, 2004
Westin St. Francis Hotel
Union Square – San Francisco



The IEEE Engineering in Medicine and Biology Society will hold its annual international conference at the historic St. Francis Hotel on Union Square in the center of San Francisco in 2004. The conference offers an opportunity for professional interaction in all areas relevant to biomedical engineering. In addition to the technical programs, professional tours will be available, affording attendees the opportunity to visit local research facilities in both educational and industrial settings.



EMBC 2004 sessions address the following themes:

- Biosignal Processing and Biosystem Modeling
 - Biomedical Imaging and Image Processing
 - Sensors and Instrumentation
 - Micro and Nano Biotechnology
 - Biorobotics and Biomechanics
 - Bioinformatics and Computational Biology
 - Healthcare Information Technology
 - Clinical Engineering
 - Drug Delivery and Gene Therapy
 - Cardiovascular and Pulmonary Systems
 - Neural and Rehabilitation Engineering
 - Molecular, Cellular, and Tissue Engineering
 - Biomechanics
 - Industrial Applications
 - Education
- ... plus 15 Mini-Symposia

REGISTER TODAY:

Student/Retired rate available

For full information and registration, visit the
EMBC 2004 website:

www.e-grid.net/conf/emb.html

KEYNOTE SPEAKERS

Paul C. Lauterbur, Nobel Laureate
2003 Nobel Prize in Medicine

Dr. Lauterbur is recognized as the father of MRI, and will share with us his experience of inventing the imaging principles for MRI as well as his views on interdisciplinary research.

Peter G. Katona, Sc.D.

President & CEO, The Whitaker Foundation

Dr. Katona will discuss the Whitaker Foundation's support of Biomedical Engineering and its impact on the development of the field.

WORKSHOPS and TUTORIALS Wednesday, 9/1
(Workshop-only registrations OK)

- Ethics in Biomedical Research
 - Cardiorespiratory Variability: Models, Mechanisms
 - Individual and Population Biomedical Models
 - Computational Biology and Bioinformatics
 - Level-Set Methods for Medical Imaging App'ns
 - Medical Infrared Imaging
 - Magnetic Resonance Imaging
 - Biomedical Robotics and Biomechanics
 - Medical Image Analysis
 - Microanalytical Devices for Bioprocessing
 - Who/What Top Employers Hire
 - Healthcare Wireless - Mobile Solutions in Hospitals
 - Pulse Oximetry
 - Project Management in a Regulated Industry
 - Clinical Engineering Practices Review
- ... and more! Check website for scheduling details

Free admission to the Exhibits!

Exhibit Hours (Preregister, or register on-site)

Wednesday, Sept. 1	Noon-6 p.m.
Thursday, Sept. 2	8 a.m.-6 p.m.
Friday, Sept. 3	8 a.m.-6 p.m.
Saturday, Sept. 4	8 a.m.-5 p.m.

Transportation: Park at the Union Street or Ellis O'Farrell garage, or ride BART or MUNI to the Powell Street station.

International Systems-on-Chip Conference (SOCC'04)

- **September 12-15**
- **Santa Clara Hilton**



Systems-On-Chip (SOC) has become a dominant issue in today's ASIC industry. SOCs have created new challenges in Design Methods, Design Tools, Design Automation, Manufacturing, Technology, and Test. The IEEE SOC Conference provides a forum for sharing advances in SOC technologies and applications. SOCC is sponsored by the IEEE **Circuits and Systems Society**.

Technical Sessions:

- High-performance circuits and methodologies
- High-performance systems and architectures
- System level architecture and design
- Network processing architectures and circuits
- Low power architecture
- Low-power design
- Reconfigurable architectures
- Reconfigurable applications
- Analog to digital conversion
- Embedded systems
- Embedded processors for SOC
- Multimedia processors
- Multi-threshold circuits
- Deep-submicron design
- Digital signal processing
- DSP circuits
- On-chip testing of embedded silicon transducers
- Design for testability and reliability
- Analog circuits
- Wireless communication
- Interconnect modeling
- Issues of SOC

... plus a poster session, panel discussions, reception, vendor fair

Register before **August 13, 2004**
to receive discounted rates.

Keynote, Plenary, and Luncheon Talks:

Keynote: "**Beyond Voice: The Third Generation of Wireless**," Paul Jacobs, Executive Vice President and President, QUALCOMM Wireless & Internet Group

Plenary: "**Reviews and Prospects of Low-voltage RAM Circuits**," Kiyoo Itoh, Fellow, Hitachi Ltd

Plenary: "**The Interconnect Era of ASIC/SOC Technology**," James Meindl, Director, Microsystems Research Center, and Professor, Microsystems, Georgia Institute of Technology

Luncheon: "**IBM ASIC Design TAT Reduction**," Jürgen Koehl, Distinguished Engineer, IBM Technology Group

Sunday Tutorials: (separate registration OK)

- Trade-Offs in RF Analog Circuit Design for SOC Applications
- SoC Design Methodology: A Practical Approach
- Substrate Coupling Noise and its Reduction through Early Design Planning in Mixed-Signal SoCs
- Heterogenous Modeling of SoCs with System C using Multi-MOC Kernel of System C
- 90-nm SOI CMOS SoC Technology with Low-Power Millimeter-Wave Digital and RF Circuit Capability
- High-Performance CMOS Circuits for Sub-90nm Design

Vendor Fair (Tuesday evening):

A reception and Vendor Fair (held jointly with the Cadence Usergroup Conference) is open to all SF Bay Area engineers, on Tuesday evening; please see the website for a list of participating companies.

The 2004 **Int'l Cadence Usergroup (ICU) Conference** is also September 12-15 at the Westin Santa Clara Hotel (across the street from the SOCC events).



Visit www.cadenceusers.org for more ICU Conference details.

To Register, or for more information

Go to:

www.e-grid.net/conf/socc.html

or call Wendy at 301-527-0900 x104 for more information by phone.



GSPx: the International Embedded Signal Processing Conference and Exhibition

GSPx is specifically focused on embedded solutions — the only event created by the industry, for the industry. The Technical Program and Technical Workshops were developed to quickly immerse you in the latest technological innovations for embedded systems.

Key session themes

Analog & Mixed Signal Design – Architectures – Benchmarking – Cores – EDA & System Design Tools – Embedded H/W & S/W – FPGA-Based Solutions – Instrumentation and Testing – Modeling and Simulation – Parallel Processing – SoC Design

Application areas

Aerospace – Automotive – Biomedical – Consumer Electronics – Cryptography – Digital Filtering – Industrial Controls – Multimedia – Navigation – Power Management – Radar – Robotics – Software Defined Radio – Speech Processing – Telephony
... plus others

Tuesday, Sept 28

FREE: IEEE Professional Development Workshops

(free with a Conference or Workshops registration, or with the free Expo Pass – organized by **IEEE-USA**)

"Taking Charge of Your Destiny: The New Rules for Career Success," Nigel Bristow, Targeted Learning

"Networking for Success," Jean Eason, Consultant

"Project Management," Tarek Lahdhiri, Ph.D, P.E., General Motors Corporation

First-Look New Product Forum

GSPx features a session at which attendees will get a first look at exciting new products in the signal-processing and embedded-processing arenas. The competition between these new hardware and software products, not previously announced, is tough — last year's acceptance rate was around 15%.

Technology Panels

Digital Video Broadcasting to Mobile Terminals – OS-Agnostic Integrated Development Environments – Are Stand-Alone DSPs Passé? – Digital Radio – The Other System Design Language: MATLAB for DSP Design Automation – When Off-the-Shelf DSPs Won't Do: New Approaches to Drive DSP Solutions – On-Chip Interconnects for SoC's: Extend the Old or Embrace the New? – Ultra Wide Band: The Next Leap in Wireless? – DSP Intellectual Property Blocks: Boon or Bust? – Software Defined Radio: The Requirements, Challenges, and Regulation

- **September 27-30**
- **Santa Clara Convention Center**
- **Technical Sessions (over 500 papers)**
- **Workshops, Technology Panels**
- **Over 150 exhibitors of embedded hardware, software, tools**

Keynote Speakers (admission free)

Dr. Theo Claasen, Executive Vice President of Technology & Strategy and Chief Technology Officer, Philips Semiconductors

Ton H. Steenman, General Manager, Embedded Intel Architecture Division, Intel

Dr. Raul Camposano, Senior Vice President and Chief Technical Officer, Synopsys

Executive Summit (Tuesday and Wednesday)

Discover how to find and capitalize on opportunities in the re-evolving economy – invest accurately, get to the right markets under acute time pressure, and identify the most advantageous technology and market strategies. This Executive Forum assembles a diverse set of industry pundits, market makers, influencers and thought-leaders, from whom you will gain key insights that will affect your own success.

AM Workshops (separate registration OK)

"Real Time Operating Systems for DSPs and Heterogeneous Systems Containing DSPs"

"Using C to Implement Real-time Image and DSP Algorithms in FPGA & Programmable SoCs"

"Designing Advanced Wireless Applications with SPW"

"System-on-Chip Design Incorporating Silicon Hive Programmable Domain-Specific Accelerators"

PM Workshops

"Model-Based Design for Signal Processing Systems with Simulink"

"Efficient DSP Design for FPGA Implementation"

"ASIP Implementation of Advanced Wireless Applications with LISATek"

"Developing Handset Solutions Around The StarCore Family of Processors"

"FPGA Signal Processing"

To Register, or for more information, go to:

www.e-grid.net/conf/gspix.html



The First IEEE Communications Society Conference on

Sensor and Ad Hoc Communications and Networks

- October 4-7
- Santa Clara Marriott

The convergence of the Internet, communications and information technologies, coupled with recent engineering advances, is paving the way for a new generation of inexpensive mobile devices, sensors and actuators. It is the distributed and ad hoc deployment of arrays of these network devices and sensors that bears promises for a significant impact, not only on science and engineering, but equally importantly on a broad range of applications relating to critical infrastructure protection and security, health care, the environment, energy, food safety, production processing, quality of life, and the economy.

This new IEEE Communications Society conference provides a forum to exchange ideas, techniques, and applications, discuss best practices, raise awareness and share experiences among researchers, practitioners, standards developers and policy makers in the field of sensor and ad hoc networks and systems. The conference is organized to provide for a degree of collegiality and continuity in the discussions of the various topics among participants from the industrial, governmental and academic sectors.

Tutorials

Tutorials are planned in the following topical areas:

- Security and Integrity Issues
- Mobility Issues
- Data Aggregation in Sensor Networks
- Localization Algorithms
- Operating Systems for Sensors
- Sensor Systems

Technical Session Themes:

- New architectures, protocols and access control to support communication, localization, time synchronization, routing and data dissemination
- Novel algorithms and theories for management, supervisory control and monitoring
- Industrial and commercial developments and applications
- Modeling and performance evaluation of large-scale distributed and ad hoc sensor networks
- Theories and models on fundamental information and communication aspects of wireless ad hoc and sensor networks
- Mechanisms for authenticated, secure communication and data dissemination in sensor and ad hoc networks
- Integration of sensors into engineered systems, including novel techniques for sensor renewable power sources, on-sensor self-calibration and self-testing
- Chip-based systems incorporating multiple sensors, computation, actuation, and wireless interfaces
- Software platforms, middleware and tools for ad hoc and sensor network applications development, deployment and management

Poster and Demo Sessions

**The Advance Program is now posted.
For more information, go to:**

www.e-grid.net/conf/secon.html

Call for Papers

ISQED 2005
6th International Symposium on

QUALITY ELECTRONIC DESIGN

March 28-30, 2005
San Jose, CA, USA



www.isqed.org



Design for Quality in the Era of Uncertainty

ISQED is the pioneer and leading international conference dealing with the design for manufacturability and quality issues front-to-back. ISQED spans three days, Monday through Wednesday, in three parallel tracks, hosting near 100 technical presentations, six keynote speakers, two-three panel discussions, workshops/tutorials and other informal meetings. Conference proceedings are published by the IEEE Computer Society and hosted in the IEL/XPLORE digital library. Proceedings CD ROMs are published by ACM. In addition, continuing the tradition of reaching a wider readership in the IC design community, ISQED will continue to publish special issues in leading journals. The authors of high quality papers will be invited to submit an extended version of their papers for the special journal issues.

Papers are requested in the following areas

- Design for Manufacturability & Quality
- Package - Design Interaction & Co-Design
- Design Verification and Design for Testability
- Embedded Test Methodologies
- Robust Device, Interconnect, and Circuits
- EDA Tools & IP Blocks; Interoperability and Implications
- Physical Design, Methodologies & Tools
- Effect of Technology on IC Design, Performance, Reliability & Yield
- Design Quality Definitions, Metrics, and Standards
- Quality Driven Design Flows; SoC, ASIC, FPGA, RF, Memory, etc.
- Quality of Modeling Abstractions and Methods (Device, Interconnect, Micro and Macro Cells, IP Blocks, ...)
- System-level Design, Methodologies & Tools
- Redundancy & Self Correction Design Techniques
- Management of Design Process, and Design Database
- Global, Social, and Economic Implications of Design Quality
- Quality based EDA Tools, Design Techniques, and Methodologies, dealing with issues such as:
 - Timing Closure*
 - R, L, C Extraction*
 - Ground/Vdd Bounce*
 - Signal Noise/Cross-Talk /Substrate Noise*
 - Voltage Drop, Power Rail Integrity*
 - Metal Migration, Hot Carriers*
 - High Frequency Effects*
 - Thermal Effects*
 - Power Estimation*
 - Plasma Induced Damage, and other yield limiting effects*
 - EMI/EMC*
 - Proximity Correction & Phase Shift Methods Verification (Layout, Circuit, Function, etc.)*
 - EOS/ESD*
 - Packaging Modeling and Simulations*

IMPORTANT DATES:

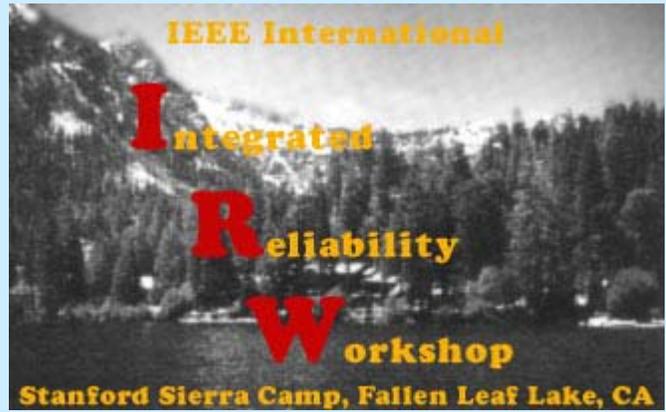
Paper Submission Deadline	September 30, 2004
Acceptance Notification	November 17-19, 2004
Final Camera-Ready Paper	December 15, 2004

Submission Process

The guidelines for the final paper format are provided on the conference web site at www.isqed.org. Authors should submit FULL-LENGTH, original, unpublished papers (Minimum 4, maximum 6 pages). To permit a blind review, do not include name(s) or affiliation(s) of the author(s) on the manuscript and abstract. Submit your papers using the [on-line](#) paper submission procedure available on the ISQED web site. Please check the as-printed appearance of your paper before submitting the paper. Address all other inquiries to publication@isqed.org.

IEEE International Integrated Reliability Workshop

- October 18-21, 2004
- Stanford Sierra Camp, Fallen Leaf Lake, South Lake Tahoe
- Technical Sessions, Tutorials



IRW'04 provides a unique environment for envisioning, developing, and sharing reliability know-how for present and future semiconductor applications. All Workshop activities take place in a relaxed and rustic setting that promotes an atmosphere of interactive learning and knowledge sharing.

Hot reliability topics of the workshop are Cu interconnects & low-k dielectrics, NBTI, ultra-thin gate oxide reliability, the reliability of deep sub-micron, SOI devices, reliability modeling and simulation, and the reliability of future technologies such as high-k gate dielectrics.

Nestled throughout the pines and cedars along the shoreline of Fallen Leaf Lake, a few miles from South Lake Tahoe, are clusters of 2 and 3 bedroom cabins furnished in the rustic style of an alpine resort. Each cabin cluster is equipped with shared bathroom facilities. All rooms have decks with magnificent views of Fallen Leaf Lake and surrounding Sierra peaks. The physical isolation of the location and the absence of distractions, such as in-room phones and television sets, encourages extensive interaction among the Workshop attendees.

Keynote Address: **Managing Tomorrow's Reliability Risks Today** – Timothy Forhan, Senior VP Corporate Reliability, AMI Semiconductor

Tutorials (included in registration fee):

- Gate Oxide Lifetime and Breakdown Degradation
- High-k Dielectrics: Instabilities, Defects
- EM Reliability-Cu/Low k Interconnects
- Advanced Back End of Line Reliability
- NBTI: What we know and need to know
- Modeling NBTI: Kinetics to Circuits
- Reliability of TFTs - Process to Device Issues

Because of limited space (120 attendees maximum) you are encouraged to register early.

For full information and registration, visit the **IRW'04** website:

www.e-grid.net/conf/irw.html

Sponsors: IEEE's Reliability and Electron Devices Societies.

IEEE is...

QUALITY Access the most highly cited publications in your field.

DEPTH Search more than 1 million articles in hundreds of technologies.

ACCESS Get the research you need flexibly and affordably.



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September 21-23
Anaheim Convention Center

Welcome to the exciting new world of Wescon, combining exhibits with industry forums on OEM electronics, nanotechnology, supply chain management and net-centric defense industry manufacturing.

Wescon is the re-engineered industry event for the total design and supply chain. The Wescon/2004 Exhibit and Conference Program broadens its focus to the needs of the total supply chain for the electronics design, manufacturing and distribution process. IEEE, AFEI, NANOWorld and Wescon come together at a joint plenary session presenting new visions of where technology is taking us, today and tomorrow.

Wescon brings engineers and scientists together in an environment that advances their education and careers by opening doors to a wealth of intellectual property, a wide range of technology tools and components, and access to immediate solutions for commercial applications.

Some of the highlights:

EDA Tools & Engineering Software

Board Design and Layout Tools - Libraries and Design Management Tools - Supply Chain Management Tools - Design for Manufacturability Tools - Component/Interconnect Modeling

Test & Measurement Equipment

Stand-Alone Test Instruments - PC-based Instruments/Cards - Wired Telecom/Datacom Test - Fiber-Optic/Electro-Optic Test - RF/Microwave/Wireless Communications Test - EMC Test - Environmental Test - Software - Test Accessories and Services

Component Technology

Connectors and Interconnects – Semiconductors and ICs - Active and Passive Components - Power Components - Electro-Mechanical Components - Mechanical Packaging

The **Autonomous Vehicle Technology Showcase** is a new and exciting event focused on advanced technologies and their impact today and tomorrow, with 7 contenders from the recent DARPA Grand Challenge – includes an introductory workshop and sidebar briefings on the exhibit floor, covering mobility, processing, sensors, radar/ladar, data storage, GPS, mapping, algorithms, emergency stopping, and more. *free*

**Wescon – owned by engineers and run
by engineers to benefit engineers.**

NANOWorldSM

"...harmonizing things seen and not seen." - S.A.G.

Held at WESCON in Anaheim, NANOWorld is the first nanotechnology conference and exposition devoted to commercial applications, practical solutions, and cutting edge products of the core technology that is driving the industry today and will dominate it tomorrow.

"By 2015, there will be new positions for more than 30,000 Engineers, Business Managers, Supply Chain Management and Educators to move nanotechnology out of the labs and into commercial and government applications. We will no longer be a cottage industry. Attending NANOWorld 2004 is the first step towards getting the insight and training you will need for the nanotech world of the future."

... Dr. Anthony F. Laviano, NANOWorld Managing Director,
*Member of the National Academy of Sciences,
National Research Council for Nanotechnology*

Day 1: Nanomaterials and nanofabrication

Day 2: Nanocomponents

Day 3: Systems integration, use and applications

NANOWorld – the first event to go beyond theory into training and educating engineers in the commercial application of nanotechnology. It is the event that will make Nanotechnology a reality for you to explore.



Enterprise Integration EXPO 2004

co-located with Wescon – free admission

The Association for Enterprise Integration (AFEI), and **EI EXPO'04**, are focused on programs that address Network Centric Operations for government and industry – information-age business, network centric warfare, electronic government – building exceptional organizations through superior information capabilities based on building blocks of people, process and technology.

For more **Wescon**, **NANOWorld** and **EI EXPO** details, please visit:

www.e-grid.net/conf/wescon.html

Continued, next page →

Wescon Keynote and Plenary Talks (all free admission)

"Technology, Security and the Networked Economy"
Dr. Ray Wells, Chief Technology Officer, IBM Federal
Sean O'Keefe, Administrator, NASA
Dr. David Whelan, Vice President, Boeing Phantom Works

"Spintronics (what's spin got to do with it?)"
Kevin Roche, IBM Almaden Research Center

"Coming to Grips with Complexity in System Development - Collaborative Approaches Using Model-Based Design"
Jim Tung, Chief Market Development Officer, The MathWorks

"See Mars in 3D" - Randy Lindemann, Mars Lander Design, JPL

"Convergence of Nanotechnology, Information & Business"
Dr. Fredric Newberg, Lead Systems Architect, Sensoria Corporation
Keith Kellogg, Senior VP Homeland Security, Oracle Corp.
Tony Scott, CTO, Information Systems & Services, General Motors

Wescon Panels (all free admission)

"Managing Global Supply Chain Security" - Bruce Rayner, Editor-in-Chief, *Electronic Supply and Manufacturing* - Tom Mayhew, Oracle - Dan Purtell, President, First Advantage Corp - Dave Chesebrough, President, AFEI

"RFID in Action" - Bruce Rayner, Editor-in-Chief - Electronic Supply and Manufacturing - Mike Anderson, Oracle - Bill Allen, Director Marketing RFID, Texas Instruments - Dan Mullen, President, AIM

"Testing High Speed Communication Signals" - Rick Nelson, *Test & Measurement World* - Gregory Davis, Tektronix - Dr. Michael Lauterbach, LeCroy Corp



Technical Sessions (all free admission)

"Cost Based Risk Analysis and Performance Measures for Supply Chain Security" - Dan Purtell, President - First Advantage Corp (chair)

"RFID: The Adaptive Supply Chain" - Robert F. Kenney Jr. Senior VP, Logistics, i2 Technologies (chair)

"Structured ASICs - Don't Get Caught Between a Rock and a Hard Place" - Chung Ho, NEC (chair)

"Jitter Analysis of High Speed Signals" - John Calvin, Tektronix Inc.

"Getting More Out of Your Digital Oscilloscope" - Michael Lauterbach, Director-Product Management, LeCroy Corporation (chair)

"Overcoming Noise in Data Acquisition" - Joseph Ting, Product Manager, Yokogawa Corporation of America (chair)

"A 5-Year Power Technology Roadmap" - Chuck Mullett, Principal Systems Engineer, On Semiconductor (chair)

"Practical Considerations for Digital Control of Power Converters" - Kip Haggerty, H&A Systems Engineering (chair)

"The Changing Semiconductor Industry: Who's Going to be Left Standing Five Years from Now" - Ed Sperling, Editor-in-Chief, *Electronic News*

... plus 9 more!

Some of the Exhibitors at Wescon 2004

Use the [registration form](#) to receive a **free pass** to Wescon exhibits, pavilions, panels, sessions

Alpha Electronics Corp. of America
American High Voltage
Amphenol Military/Aerospace Industrial Operations
Anritsu Company
Astro-Med
BiPower Corp.
Boeing Co., The
Bomar Interconnect Products Inc.
C3D Development Corp.
Central Semiconductor Corp
Century Circuits and Electronics
CET TECHNOLOGY, Inc.
CKC Laboratories, Inc.
Conductive Technologies
CRC Press
Datamax Corp.
Dell Computer
Edac Power Ltd.
Educated Design & Development
Electro Rent Corporation
Emulation Technology, Inc.
Endicott Research Group
Enterra Solutions
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Fischer Connectors

FLIR Systems
Fosta-Tek Optics, Inc.
Golden Pacific Electronics
Green Hills Software Inc
Hensley Technologies, Inc.
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Information Handling Services
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Interpower Corp.
Ironwood Electronics
JAE Electronics
Jet Propulsion Laboratory
LeCroy Corp.
LPKF Laser & Electronics, Inc.
Marway Power Systems
Micro Precision Calibration, Inc.
Molecular Imprints, Inc.
Mouser Electronics
Multi-Contact USA
Mytech Corp.
National Wire & Cable
North Penn Technology.
Northrop Grumman
Northwest EMC
Olympus Industrial America, Inc.
Optical Polymers International
Renco Electronics, Inc.
RF Industries, RF Connectors

RF Installations
Schlegel Systems, Inc.
Signal Enterprises Inc.
SKS Die Casting
Skynet Electronics
Specialty Labs
SUNLED Corporation
Sunlike Display Tech. Corp.
Suyin Connector USA
TCC Industries, Inc.
Tech-Power International Co.
Tektronix, Inc.
TestEquity, Inc.
Tocos America
Toshiba America Information Systems.
Ultravolt, Inc.
Unisys Corporation
Unitrack Industries, Inc.
Victor Electronics
Virtual Standard
Pacific Aerospace & Electronics
Panel Components Corporation
Para Light Corp.
Phoenix Company of Chicago
Printed Circuits, Inc.
Prototron Circuits, Inc.
Rapid Prototyping Corp.
... and many more!

FRIDAYS September 3, 10, 17, 24

Weekly Meeting

Time: 3:00 - 5:00 P.M.

Place: NOVA Private Industry Council -
CONNECT! Workshop Center
"Palo Alto" Room (inside 767)
505 W. Olive Avenue
Sunnyvale

Map: www.novapic.org/contact_us/

Info: For further information contact Art Rahman,
Chair of IEEE CNSV, at
ataur.rahman@worldnet.att.net

Web: www.ieee-sv-consult.org/

The Entrepreneurs SIG – a part of the Consultants' Network of Silicon Valley – meets most weeks on Friday afternoon. You are invited to attend.

For specific information, please contact the SIG chair, Art Rahman: ataur.rahman@worldnet.att.net

CQE EXAM PREPARATION COURSE

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Course Starts October 12th

Instructors: Fred Schenkelberg, CRE, CQE
Jurek Zarzycki, CRE, CQE

Schedule: Eight consecutive Tuesdays 6 - 10 PM from
October 12th through November 30th, 2004

Location: Santa Clara, CA

Course Fee: \$995 including materials (Textbook & Solutions Book/Answer Key distributed the first night). A 25% discount is extended to anyone who is currently unemployed. Please note that this course fee does not include the fee for the examination which is collected by ASQ directly.

Registration: This course fills up quickly and seating is limited. To register, please email ASAP to: cqeprep@opsalacarte.com or call (408) 472-3889

Exam Date: December 5th, 2004

More Information: www.opsalacarte.com/cqeclass.pdf

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WEDNESDAY SEPTEMBER 8

Alternative Packaging Technologies for 3-D Packaging

Speaker: Joe Fjelsted, Silicon Pipes

Time/Cost: Seated dinner at 6:30 PM (\$25 before Sept 4; \$30 after & at door) Presentation (no cost) at 7:30 PM

Place: Ramada Inn, 1217 Wildwood Ave (Fwy 101 frontage road, between Lawrence Expressway and Great America Parkway), Sunnyvale

To reserve: allen.m.earman@intel.com

Web: www.cpmt.org/scv/ for map and PayPal link

Joseph Fjelstad, a co-founder of Silicon Pipe, has over 30 years of experience in the electronic interconnection industry. He holds nearly 100 US patents and has focused his career primarily on the conception and development of novel electronic interconnection structures and the manufacturing processes required to make them. Joe is the author, co-author or editor of several books on electronic interconnections including "Flexible Circuits for Engineers" and "Flexible Circuit Technology" and numerous technical papers. In addition, he writes two monthly columns: "Flexible Thinking", for Circuitree Magazine and "Small Matters", for Global SMT and Packaging. He is also a member of the JISSO International Committee and the IPC National Electronics Roadmap Committee.

Electronics interconnection and packaging continues to grow and evolve to meet the needs of present and future generation electronic products. While long viewed as fundamentally two dimensional, a newly coined, overarching term that captures the essence and intent of the new paradigm is Volumetric System Miniaturization and Interconnection (VSMI). It is apt because over that last few years, the electronics industry has been seriously exploring the 3rd dimension, or volume, in an ongoing attempt to discover new solutions for electronic interconnections capable of directly addressing the challenges that lie ahead. This presentation will review some of the many new three dimensional packaging and interconnection solutions that have been introduced over the last few years and look at some of the solutions currently in development and some potential applications.

Net-Centric Defense Industry Manufacturing



"With the enhanced involvement of the IEEE, it's about all the intellectual property that fuels the supply chain," says James Hungerford, President of Electronic Conventions, Inc. (ECI). Hungerford was of course talking about Wescon, which has been totally re-engineered for Fall 2004 at the Anaheim Convention Center, September 21-23, 2004.

The vibrancy of the exhibit hall will be enhanced by the co-location of AFEI (Association for Enterprise Integration) with its net-centric appeal to aerospace and defense industry executives, and even more by the two new Advanced Technology pavilions, one devoted to Autonomous Vehicles and one devoted to nanotechnology. IEEE visibility on the exhibit floor will include a Job Fair, access to the IEEE Digital Library, and presentation of IEEE's well-known 100 Years if Avionics exhibit. Other pavilions will cover Test and Measurement, Power Electronics, Design and Analysis, as well as the IPE component mix which has always been central to Wescon's success.

MOST WESCON EVENTS ARE FREE

For more information, see this issue's [Wescon Pages](#)

Improving Utility Business Processes and Workflow Through Cost-Effective Business Integration Initiatives

Speake): Ali Vojdani, Ph.D., President,
Utility Integration Solutions Inc.
Time: Noon
Cost: \$4 (Lunch included)
Place: PG&E Building; 245 Market Street;
Conference Room A; San Francisco
RSVP: Email Curt Irwin at cpi3@pge.com or
(415) 973-8171
Web: www.ieee.org/sf/pes_pdf/Sep04_Vojdani.pdf

Leading utility companies continuously strive to improve their key performance metrics related to efficiency, reliability, customer service, and safety. To that end, they search for effective ways to streamline and automate the underlying business processes. In this presentation, Dr. Vojdani will examine how progressive utility companies can apply proven technological advances in business process management and workflow automation in their quest for improved performance.

Dr. Vojdani will present benefits of business integration and provide examples of progressive utilities that have embarked on this path, and have begun reaping the rewards of their pioneering initiatives.

Ali Vojdani is the President of Utility Integration Solutions, Inc (UISOL). He has over 20 years of experience in the computer applications and systems integration services in the utility industry. At UISOL he serves power companies such as the California Independent System Operator (ISO), Pacific Gas and Electric (PG&E), and the Western Area Power Administration (WAPA).

During his career Dr. Vojdani has worked for various companies, including Vitria Technology, Perot Systems, EPRI and PG&E. Dr. Vojdani has a Ph.D. degree in Electrical Engineering from McGill University in Montreal, Canada, is a senior member of the IEEE, and serves on the Technical Committee of the Power Industry Computer Applications (PICA) conference. He has authored more than 50 technical articles and reports, and has addressed and chaired numerous workshops and technical panels around the globe on issues related to computer applications in the utility industry.

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THURSDAY SEPTEMBER 9

Microwave High Power Device Measurements in an Isothermal Environment

Speaker: Dr. Mohamed Sayed, Agilent Technologies
Time: 6pm - Refreshments and Social Hour, 7pm - Technical Presentation (no cost)
Place: Agilent Technologies (Santa Cruz conference room), Bldg 50, 5301 Stevens Creek Blvd, Santa Clara
RSVP: not required
Information: Benson Chan

Today's communications systems have fueled a seemingly insatiable need for higher-efficiency and higher-power microwave solid state devices (HBT, PHEMT, MESFET and MOSFET) with different materials (SiGe, GaN, SiC, GaAs and Si). Measuring high power microwave devices at their rated output power on-wafer has been challenging due to self heating and trapping effects. A technique for isothermally testing high power devices using pulsed RF and pulsed bias will be described in this presentation. Several measurement systems were developed by the author for specific applications and specific parameters such as: voltage, current, RF frequency range, pulsed width range and pulsed repetition frequency range. The latest progress by researchers in France, USA and Australia will also be presented.

Mohamed Sayed was born in Cairo, Egypt where he obtained his BS and MS degrees in electrical engineering from Cairo University. He obtained his Ph.D. degree from Johns Hopkins University in Baltimore, Maryland.

Mohamed worked at Hewlett-Packard Company for 27 years, and three years for Agilent Technologies. He developed and launched state-of-the-art microwave and millimeter wave systems and products through initiating and creating cutting-edge technologies for vector network analyzers, sources, spectrum analyzers, and counters. He has been principal consultant for Microwave and Millimeter Wave Solutions since April 2003.

Mohamed taught graduate and undergraduate courses at Cairo University, Johns Hopkins University, Howard University, and San Jose State University. In addition, he has been a technical advisor for Masters, Doctoral and Post Doctoral candidates.

Mohamed is author and co-author of over 40 publications in the field of device characterization, microwave and millimeter wave measurement systems and high power amplifier design. He is a member of IEEE and was technical program chairman of the 46th ARFTG held in San Francisco, June 1996, and session chairman at the 2000 European Microwave Conference held in Paris, France.



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MONDAY SEPTEMBER 13

Anytime, Anywhere IP Communications

Speaker: Marthin De Beer, Vice President and General Manager, Cisco Systems, Inc
Time and Cost: 6:30pm - Fast Food & drinks (\$1 donation); 7:00pm - Talk
Place: National Semiconductor Credit Union Building (Building 31), 955 Kifer Rd., Sunnyvale (Near the intersection of Lawrence and Central Expressway)
Web: www.ewh.ieee.org/r6/sps/ for map

IP Communications – the convergence of Voice, Video and Data onto a single infrastructure – is delivering new opportunities for productivity and improved communications to Enterprise employees. This same technology is now becoming available to consumers with a host of VoIP services being offered by the likes of AT&T, Vonage, Comcast and BroadVoice. This, however, is only the beginning of what could be a revolution in the way we work, live, play and learn.

Marthin De Beer is the Vice President and General Manager for the Commercial Voice and Video and Telepresence Business Units of Cisco Systems. Over the last five years, he directed the overall engineering development and marketing of converged solutions for business and service providers. He was a driving force behind the introduction of Cisco's Architecture for Voice, Video and Integrated Data (Cisco AVVID), and played a key role in growing Cisco's IP Communications revenues from inception to a billion-dollar business. Mr. De Beer has more than 18 years experience in the communications and software industry, and has been at Cisco for 9 years directing key platforms such as the industry leading Cisco Catalyst switching solution and, more recently, the Cisco IP Telephony and VoIP Systems.

Prior to joining Cisco, Mr. De Beer was founder of two start-up companies in the communications and software industry, and previously held senior marketing positions at Hughes LAN Systems and Persetel Computer Systems.

Mr. De Beer holds a Bachelors degree in Engineering from University of Pretoria, South Africa.

RFID products, applications and technologies will sweep through the Wescon conference like a tsunami. Presentations, demonstrations and exhibits will address implementation, impacts, technologies and solutions.

A featured demonstration will be presented frequently during the three-day gathering by the Department of Defense. The product manager for Automatic Identification Technology will be responding to the effort for embedded RFID within the Army's Movement Tracking System, as well as the DoD mandate for components to have initial capability to read passive RFID tags by January 2005.

RFID supply chain issues will also be covered in presentations by Bruce Rayner, Editor-in-Chief of *Electronics Supply and Manufacturing Magazine*, and including executives of Oracle, Texas Instruments, AIM (Association for Automatic Identification and Mobility), in panel discussions of the impact of RFID on supply chains. i2 Technologies will present a program on the adaptive supply chain and its use of RFID to transcend functional boundaries between engineering, marketing, sales, etc. Wescon will both feature exhibits on passive and active tags, IT infrastructure integration, and strategic business impact.

Tuesday, Wednesday, Thursday – September 21-23

Registration is free for all of the RFID programs and for much more!

For more information, see the [Wescon information pages](#) in this issue of the GRID.



TUESDAY SEPTEMBER 14

MEMS: Moving into the Mainstream

Speaker: Prof. Roger T. Howe, Berkeley Sensor & Actuator Center, University of California at Berkeley
Time: Pizza social at 6:00pm; Presentation at 6:15pm
Cost: Free
Place: National Semiconductor Corp. Building 31 Large Auditorium, 955 Kifer Road, Sunnyvale
RSVP: not required
Web: www.e-grid.net/docs/0409-scv-eds.pdf

This talk will begin with a perspective on why silicon MEMS have continued to be a fringe technology for the semiconductor industry. As sensors and actuators, silicon microstructures have been relegated to a peripheral role in information technology. Although several attempts have been made to merge MEMS and electronics over the past twenty years, a standard, low-cost technology has yet to emerge. The growing momentum toward ubiquitous wireless internet access, sensor networks, and RF tags promises to pull MEMS technologies into the mainstream of the semiconductor industry.

Energy is a very scarce resource for untethered microsystems; this fact is motivating designers to consider solutions outside the domain of purely electronic communications and computation. To take advantage of MEMS in low-cost, high-volume microsystems, they must be integrated on top of foundry CMOS. Over the past several years, a low-temperature modular process for post-CMOS fabrication of poly-SiGe microstructures has been demonstrated at Berkeley. After reviewing progress with this technology, the talk will conclude with some future directions, including the role of parallel assembly processes in the low-cost manufacturing of microsystems incorporating non-silicon materials.

Roger T. Howe is a Professor in the Departments of Electrical Engineering and Computer Sciences and Mechanical Engineering at the University of California at Berkeley. He is also a Director of the Berkeley Sensor & Actuator Center and is currently serving as Chair of the Electrical Engineering Division and Associate Chair of the EECS Department. He received the B.S. degree in physics from Harvey Mudd College, as well as an M.S. and Ph.D. in electrical engineering from the University of California at Berkeley in 1981 and 1984. After teaching at Carnegie-Mellon University in 1984-85 and at MIT in 1986-87, he joined the Berkeley faculty in 1987. His research interests include micro electromechanical system (MEMS) design, micromachining processes, and parallel assembly processes. A focus of his research has been processes to fabricate integrated microsystems.

SCV Electromagnetic Compatibility

TUESDAY SEPTEMBER 14

September Social & Discussions

Speaker: None, just informal discussions
Time: 5:30 - 8:00 PM, no-cost catered food
Place: Applied Materials Bowers Cafeteria, 3090 Bowers Ave, Santa Clara
RSVP: Not required

No presentation is scheduled, but discussions will likely cover the recent EMC Symposium and reactions to its talks and tutorials. Bring your own views and impressions.

WEDNESDAY SEPTEMBER 15

Presentation and Tour at Boston Scientific in Fremont

Speaker: Douglas Petty, Director of Strategic Marketing for the Imaging Group, Boston Scientific

Time: 6:00 PM - Talk; 6:30 - Career opportunities at BSC (speaker from Human Resources); 6:40 - Tour of BSC facility (clean room, instrument production floor); 7:10-7:30 - Refreshments at Building 4

Place: BSC Offices in Fremont (directions will be sent to you)

RSVP: required – Contact Kim Parnell (kim.parnell@gmail.com) – there is room for only 25 attendees

Web: www.ieee.org/scv/embs/

Mr. Douglas Petty will provide an overview of the Bay Area Boston Scientific business franchises and their respective markets, which include Interventional Cardiology, Interventional Neuroradiology and Neurosurgery and Electrophysiology.

Mr. Petty is the Director of Strategic Marketing for the Imaging Group at Boston Scientific based in Fremont, CA. The Strategic Marketing Group evaluates the clinical needs in new and emerging markets and evaluates business opportunities. He has worked in the Medical Device Industry for more than 20 years in both large and small companies. Mr. Petty is a Graduate of the University of Illinois School of Business Administration.

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Tuesday, Wednesday, Thursday – September 21-23

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For more information, see the [Wescon information pages](#) in this issue of the GRID.



Next-Generation Compact Modeling

Speaker: Professor Robert W. Dutton, Stanford University
Time and Cost: 6:30pm - Fast Food & drinks (\$1 donation); 7:00pm - Talk
Place: Cadence (Building 5), 2655 Seely Ave, San Jose
RSVP: by email to ssc_scv_rsvp@yahoo.com
Web: www.ewh.ieee.org/r6/scv/ssc/

Moore's Law scaling has led to ultra-short channel length devices that, while giving multi-GHz performance, present a host of new challenges. This talk will look at a range of "other" issues that face compact modeling of nano-meter scale technology. This will include a growing list of parasitic effects related to gate leakage, substrate coupling and thermal limitations. There are also issues of intrinsic device scaling; there is growing momentum for open source, high-level specifications, and for models that facilitate new paradigms for model portability. This paradigm shift will be considered for both intrinsic and parasitic modeling needs.

Professor Robert Dutton attended the University of California, Berkeley where he received the BS, MS and Ph.D. degrees in Electrical Engineering. He joined the faculty of Electrical Engineering at Stanford University where he has served as Director of Research at the Center for Integrated Systems (CIS) and is currently Director of the Integrated Circuits Laboratory (ICL). His research career has focused on computer simulation of integrated circuit technology, including both models of the IC fabrication processes and electrical behavior of new transistor and circuit structures. The simulation tools and software pioneered by Prof. Dutton's group has been universally adopted by industry and used prolifically in support of technology development.

In 1980 he founded the first commercial Technology Computer Aided Design (TCAD) company, Technology Modeling Associates, that became a public company in 1996 (TMAI, NASDAQ), which merged with Avanti and is now part of Synopsys. He had industrial experience at Fairchild Semiconductor, Bell Labs, IBM, Hewlett-Packard and Matsushita. His awards include IEEE Fellow, J.J. Ebers and Jack A. Morton Awards, Member of the National Academy of Engineering (NAE) and the Recipient of the Computers and Communications (C&C) Prize, Japan.

James Long, Ph.D., P.E.

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TUESDAY SEPTEMBER 21

Reliability Tools and Integration for the Manufacturing Phase

Speaker: Mike Silverman, C.R.E., Managing Partner, Ops A La Carte LLC
Time: 7:00 PM Informal Networking, 7:15 Formal Networking, 7:30 PM Meeting Starts
Place: Sheraton Hotel, 1100 North Matilda Ave, Sunnyvale
RSVP: not required. SEATING IS LIMITED, so arrive early
Web: www.ieee-sv-consult.org/200409.htm

Mike Silverman is an experienced leader in reliability improvement through analysis and testing. He has also led numerous quality system development programs. He has 20 years of reliability and quality experience, the majority in start-up companies. Mike is also an expert in accelerated reliability techniques, including HALT and HASS. He is a Certified Reliability Engineer and founder and Managing Partner at Ops A La Carte, a Professional Consulting Company concentrating on providing a full spectrum of reliability services to customers. Mike has 20 years of reliability experience. He set up and ran an accelerated reliability test lab for 5 years, testing over 300 products for 100 companies in 40 different industries. He has consulted for over 100 companies in a variety of different industries including telecom, medical, semiconductor, consumer, and defense. Mike has authored and published 7 papers on accelerated reliability techniques and has presented these around the world. He has also developed and currently teaches 9 courses on reliability techniques.

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In the life cycle of a product, the majority of the reliability effort is spent in the design and prototype phase. However, very little is known about what we as engineers can do to improve the reliability of a product during the manufacturing phase of a product.

Techniques such as Highly Accelerated Stress Screening (HASS), Field Failure Tracking Systems, and Reliability Performance Reporting programs are just a few of the methods we can use to improve a product's reliability. And proper integration of each of these techniques can assure that we are getting maximum benefit out of each at the lowest possible cost to the program.

Join us to learn more about how to help your clients or company improve their products.

One-Day IEEE Short Course:

"Mandated Pb-Free Solder Assemblies: Exploring the Transition's Impact on Product Reliability"

- Tuesday, October 5, 2004
- At Hewlett-Packard Co, 10435 N. Tantau, Cupertino
- 8:00 AM Registration; 8:30 AM - 4:30 PM Symposium
- Fee: \$125 (IEEE Members), \$150 (non-Members)
- For managers, engineers, program/production mgrs

As governments in Europe and Asia begin the phase-in of their "Removal of Hazardous Substances" regulations, electronics designers and manufacturers are in the final stages of changing from classic tin-lead solders to various compositions of Pb-free solders. The industry has 100 years of experience and reliability optimization for tin-lead solders; the new solders present us with considerable uncertainty. Will our computers, wireless devices, and other products show considerably lower reliability over the next few years? What are the risks for which we must be planning?

The focus in this special one-day event is on the technical engineering impact of the transition. What do we know, what do we not know, and where are the remaining significant risks?

Lectures:

- **"Lead-Free Solder Joint Reliability"** - Jean-Paul Clech, Solder Reliability Solutions
- **"Managing Compatibilities for Lead-Free Transition and Environmental Compliance"** - Dr. Dongkai Shanguan, Flextronics
- **"Failures at the Customer and the Influence of Pb-Free"** - Dr. Craig Hillman, Univ of Maryland
- Plus panel discussions based on attendee concerns, experiences

More Information: www.cpmt.org/scv/

Changes in Industrial Power Management Systems

Speaker: Marilyn Self, Product Specialist, GE Multilin
Time: 5:30 PM - No-host social; 6:15 - Presentation; 7:15 - Dinner; 8:00 Balance of Presentation
Place: Marie Callender's Restaurant (The Garden Room), 2090 Diamond Blvd, Concord (near the Concord Hilton Hotel)
Cost: Dinner is \$22 for IEEE members; \$25 for non-members
RSVP: by Sept 21, to Gregg Boltz (925-210-2571)
Web: www.ewh.ieee.org/r6/oeb/ias.html

Marilyn Self is a product specialist with GE Multilin. She earned her degree in Chemistry and Computer Science at Grand Canyon University in Phoenix, Arizona. She previously worked for Honeywell, developing and implementing the Global network strategy for the networked DCS line. In her current role with GE Multilin, Marilyn is responsible for the Power Management software and hardware.

Changes in Power Management Systems are being driven by Microsoft and customer's demand for integration while preserving their legacy investments. Ms. Self will talk about the changes in power management systems being driven by the PC operating systems, what technology is available for easier integration of power management into computer systems, the move away from the traditional HMI (human machine interface), the use of artificial intelligence to maintain power quality, and the technologies being implemented through the WEB.

Net-Centric Defense Industry Manufacturing



"With the enhanced involvement of the IEEE, it's about all the intellectual property that fuels the supply chain," says James Hungerford, President of Electronic Conventions, Inc. (ECI). Hungerford was of course talking about Wescon, which has been totally re-engineered for Fall 2004 at the Anaheim Convention Center, September 21-23, 2004.

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MOST WESCON EVENTS ARE FREE

For more information, see this issue's [Wescon Pages](#)

Real-World Experience with a Mobile Broadband Network

Speaker: Dr. Jin Yang, Verizon Wireless
Time: 6:30 - 7:00 PM Pizza;
7:00 - 8:30 PM Presentation
Place: Bishop Ranch 1, 6101 Bollinger Canyon Rd,
San Ramon (just off I-680)
Cost: Dinner is \$22 for IEEE members;
\$25 for non-members.
RSVP: Please send a quick note to
oeb@comsoc.org to allow us to order the
correct number of pizzas
Information: email to Malik Audeh, audeh@ieee.org,
or call (510) 305-6022
Web: www.comsoc.org/oeb/ for Map

Dr. Jin Yang is a Sr. Member of Technical Staff at Verizon Wireless, where she is responsible for radio network strategy and network planning. She played a key role in the first cdmaOne network deployment in 1996 and the first metropolitan 1xEV-DO commercial rollout in the US during 2003. She has numerous patents, academic papers, and has co-authored one book in wireless communications. Her current primary interests are wireless broadband communications, radio network planning and optimization, CDMA and telephony. Dr. Yang received her B.Sc. and Ph.D. from Tsinghua University.

The mobile wireless data network is evolving to support broadband services, such as large file transfer, intranet and Internet access, video, and audio services. The next generation of wide area mobile broadband networks, such as IS-856 (1xEV-DO), IS-2000-Rev.C/D (1xEV-DV) and UMTS-HSDPA, share similar physical layer principles. Although intensive studies and simulations have been conducted, the performance of a real live system is still not well known. This talk will present extensive tests and analyses of a 1xEV-DO pre-commercial trial network and shine some light on the behavior of mobile broadband networks.

The performance and deployment of 1xEV-DO are evaluated under various radio conditions with stationary, pedestrian and vehicular mobility. High spectrum efficiency is achieved through adaptive modulation and coding, Hybrid ARQ, multiple user diversity and fast scheduling. The characteristics of those major design components are addressed. The sector throughput is around 5 times that of currently deployed nationwide cdma2000-1x network. The link budget of the 1xEV-DO network is similar to that of the existing cdma2000-1x network. This ensures a cost-effective and capacity efficient deployment of the mobile broadband network.

A highly integrated 1xEV-DO and cdma2000-1x network can provide a spectrum-efficient means to support both delay sensitive voice and delay tolerant data services.

We will continue our feature at the meeting of providing some networking time for those that want to stand and make a brief announcement. If you're looking for a new position, have a position to fill, want to let us know that your new start-up is ready for business or have a similar announcement, bring your resumes, job descriptions or company brochures and be prepared to make a match. Please keep your statements brief, so we'll have time for everyone. There will be time before and after the formal meeting for one-on-one discussions.

Interrupting Capacity and Short-Time Current Ratings

Speaker: David D. Roybal, Eaton Electrical
Time and Cost: Social at 5:30, meeting at 6:00 PM, dinner at 7:00 PM (\$25)
Place: Sinbad's Restaurant, Pier 2 Embarcadero Street, SF
To reserve: Contact Sonny Siu at ssiu@eypmcf.com
Web: www.e-grid.net/docs/0409-sf-ias.pdf

David D. Roybal received the Bachelor of Science degree in electrical engineering from Santa Clara University in 1969. He is a Fellow Application Engineer with Eaton Electrical in Livermore, California. He previously was an engineer with Westinghouse for more than 24 years.

Mr. Roybal is a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE). He has served as an officer of the San Francisco chapter of the IEEE Industry Applications Society, the San Francisco IEEE Section, and the IEEE Bay Area Council. He is a member of the National Fire Protection Association (NFPA), the National Society of Professional Engineers (NSPE), the International Association of Electrical Inspectors (IAEI), the California Electrical Inspectors (CEI) Executive Board, and chairman of the NEMA California Safety Regulations Advisory Committee. He is a registered professional engineer in the State of California. The Westinghouse Board of Directors awarded him the Westinghouse Order of Merit in 1993. He was a recipient of the IEEE Third Millennium Medal in the year 2000.

Low-voltage circuit breakers have interrupting capacity ratings and short-time current ratings that an engineer uses for their application. Interrupting capacity and short-time current ratings define different circuit breaker performance characteristics. A good understanding of interrupting capacity and short-time current ratings allows the electrical engineer to make a proper comparison of various circuit breaker designs. While interrupting capacity rating levels of circuit breakers are somewhat consistent throughout the electrical industry, short-time current rating levels are often inconsistent. It is important to understand the performance characteristics of the specific device in order to apply it properly. The present emphasis on higher interrupting ratings, current limiting, and series ratings has impacted the short-time current ratings of circuit breakers. The presentation will examine the interrupting capacity and short-time current ratings of molded-case circuit breakers, insulated-case circuit breakers, and low-voltage power circuit breakers and their effect on time-current coordination. We will review resistive and reactive X/R ratios and explain the short-time current and instantaneous trip characteristics of microprocessor-based trip units.

TUESDAY SEPTEMBER 28

Central Office Power & Ground Requirements and Design Solutions

Speaker: Marko Radojicic, Supervisor for Quality and Reliability Engineering, Nokia

Time and Cost: Social at 5:30, meeting at 6:00 PM, dinner at 7:00 PM (\$25)

Dinner: Optional dinner (5:30 PM) at El Torito Mexican Restaurant, 2950 Lakeside Drive, Santa Clara

Talk: 7:00 PM, Applied Materials, Bowers Café, 3090 Bowers Ave, Santa Clara

RSVP: none required

Web: www.e-grid.net/docs/0409-scv-pses.pdf

This presentation emphasizes product safety, but covers a lot of ground, both literally and figuratively. First the speaker takes a close look at bonding and grounding, from definitions to regional implementations, and then he moves on to power considerations for different powering architectures. After excitement with power fault scenarios, the stage is set to consider specific NEBS and ILEC requirements. Add in references, acronyms and a question and answer session, and you have a very full and satisfying evening.

Of course, there will be the usual sharing of local job openings, suggestions for future meeting topics, networking, and other useful information. Interested members of other local IEEE Society Chapters are encouraged to attend!

Marko Radojicic has the background and expertise to explore his subject in almost any direction. Starting with a BS and MS in Electrical Engineering from the University of Ottawa in Ontario, Canada, he worked ten years at Nortel, then spent some time with a startup company. Along the way, he became an ASQ Certified Reliability Engineer, a NARTE Certified Product Safety Engineer and a member of the IEEE. He has been a speaker at Reliability, EMC and NEBS Symposia. Presently, he is the Supervisor for Quality and Reliability Engineering at Nokia.

Forum: The Art of Commitment and The Science of Change

Speaker: Cynthia Scott, PhD., M.P.H.
Time: 6:00 PM

Presentation: Walking A Tight Rope with Resilient Packet Rings-- A Startup Story

Speaker: Nirmal R. Saxena, VP of Engineering and CTO, Alliance Semiconductor
Time: 7:45 PM

Time: Forum at 6:00pm, Dinner at 7:00pm, after dinner presentation at 7:45pm

Place: PRIME Hotel (former Wyndham), 1300 Chesapeake Terrace, Sunnyvale - off Lawrence Expy/ Caribbean Drive at Hwy 237

Reservations: through website:
www.ieee-scv-ems.org

Cost: (with reservations thru Friday Sept 24): \$25 (IEEE member), \$30 (non member), \$5 surcharge thereafter (cash or check at the door). Student IEEE members - \$5.

Other information: leave message with Rich Hendrickson at (408) 203-3462

performance. She will share her experience from a wide variety of organizations and give you a “change agents” perspective from working at all levels in organizations.

Cynthia Scott is an organizational consultant, author and coach. The depth, scope, and quality of Cynthia’s experience have made her a preferred change management resource for Fortune-500 multinational corporations and for smaller, regional firms in a broad spectrum of corporate leaders, including financial, healthcare, high technology, and government sectors.

Cynthia’s expertise includes organizational effectiveness, management development, CEO coaching, senior team development, and the strategic planning and implementation of organizational change. She is a frequent keynote speaker at national conferences on the topics of: Leadership, Mastering Change, and Minimizing Risk and Maximizing Performance. Reports of Dr. Scott’s work have been featured in publications such as the **Wall Street Journal**, **Business Week** and the Stanford Business School Newsletter.

Cynthia Scott is co-author of 14 books, among them: **Take This Job and Love it**, **Getting Your Organization to Change**, **Rekindling Commitment**, **Managing Organizational Change**, **Empowerment**, **Organizational Mission, Vision and Values**, and numerous articles in management and trade journals.

She holds a Ph.D. in Psychology from the Fielding Institute, a M.P.H. in Health Planning and Administration from the University of Michigan and a B.A. in Anthropology from University of California, Berkeley.

Before-Dinner Forum presentation -

The Art of Commitment and The Science of Change

Have you been through enough organizational change to make you curious to find out what you know and might want to know more? Are you currently involved in or leading a change in your organization? Want to increase your competency and capacity to lead and benefit from change? Dr. Scott has provided the models and tools for a wide variety of mergers, cultural transformations, and structural changes over the past 20 years. She will use her books **Getting Your Organization to Change**, **Managing Change at Work** and **Rekindling Commitment** as a foundation to talk about a basic way to think about mobilizing, designing and implementing change to create organizational

After-Dinner presentation -

Walking A Tight Rope with Resilient Packet Rings-- A Startup Story

“Walking a tightrope” is about the technical and management challenges faced at startup (year 2001) and since at Chip Engines (now part of Alliance Semiconductor). Chip Engines was designing chips while the IEEE 802.17 Resilient Packet Ring Working Group was still defining the standard. The main thrust of this talk covers:

- insights (based on real experience) that guide developers in anticipating changes and planning workarounds in the midst of changing requirements.

- challenges faced in working with engineering teams distributed around the globe.

Dr. Nirmal R. Saxena will apply his first hand experience of engineering management as the VP of Engineering and CTO at Alliance Semiconductor. He is responsible for the architecture definition, engineering management, and new product development. Dr Saxena is also a Consulting Faculty in the Electrical Engineering Department at Stanford University.

Prior to joining Alliance, he was VP of Architecture at Chip Engines where he was responsible for the design and development of Resilient Packet Ring controllers. Dr Saxena has served in senior technical and management positions at Tiara Networks (now Tasman Networks), the Stanford Center for Reliable Computing, Silicon Graphics, HaL Computers, and Hewlett Packard.

Dr Saxena holds a BE degree from Osmania University, India; a MSEE degree from the University of Iowa; and a Ph.D. EE degree from Stanford University. He holds more than 10 patents and has published in the IEEE Transactions. He is a Fellow of IEEE (2002) and was cited for his contributions to reliable computing.

IEEE, REGION, and COUNCIL NEWS

K-12 Education Committee Needs Volunteers!

It's Back to School time in the Santa Clara Valley! The IEEE Santa Clara Valley Section's K-12 Education committee needs volunteers to assist with...

- Book sorting
- Tutoring and mentoring
- Teaching teachers
- Funding/Donations
- Lego Robotics mentor
- Science Fair judges
- Laser Optics

Can you help out? Please see our listing of opportunities (right) and call David Fong 510-687-4507 or email daffy@ieee.org to see where we can best use your talents in helping children. Our K-12 opportunities this year:

- August: **Future City** (mentor middle school students) 0-1 hrs week/15 weeks
- September: **Lego Robotics** (middle school) 2-3 hrs week/ 1 - 6 weeks
- October: **Lego Robotics** (middle school) 2-3 hrs week/ 1 - 6 weeks
- November: **Lego Robotics** (middle school) 2-3 hrs week/ 1 - 6 weeks

- December: **Gift of Reading**: book sorting at San Jose Mercury 2-4 hrs week/ 1 week
- January: **Lego Robotics** (middle school)
- February: **Botball Training**, 2-3 hrs week/ 1 - 6 weeks
- February: **Lego Robotics** (middle school)
- February: **Engineer's Week**
- February: **Tech Challenge**, 2-3 hrs week/ 1 - 6 weeks
- March: **Synopsys Science Fair** (sciencepalooza)
- March: **Science Fair Judge** (Santa Clara Valley)
- October-May: **Mentor** High school students interested in Engineering
- May-June: **Career Fair** (high school) 2-3 hrs week/ 1 - 4 weeks

More Details at www.ewh.ieee.org/r6/scv/k-12/

From IEEE NEWSWIRE

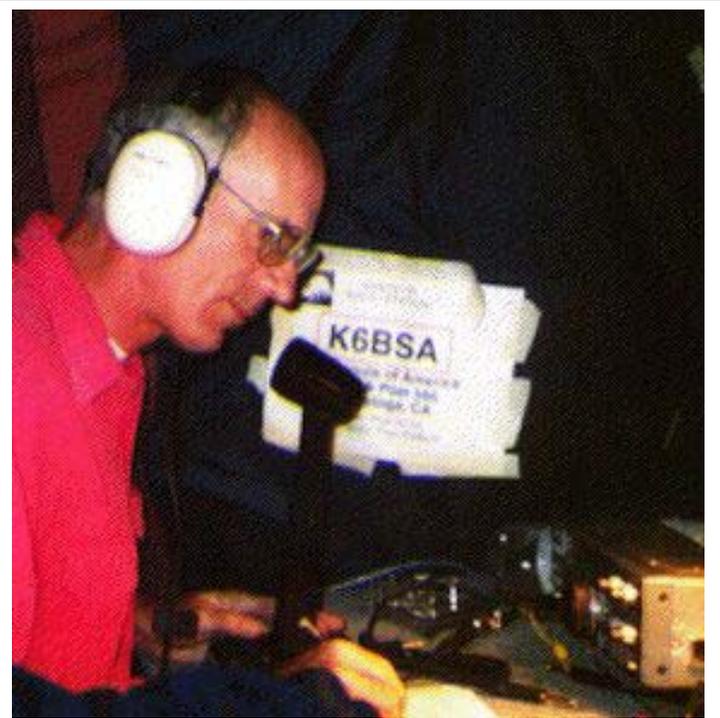
IEEE & the Scouting Movement: Working Together to Attract Students to IEEE and the Engineering Profession

Educational Activities News Briefs - 25 August 2004
Media Relations Contact:
Marilyn Catis, mg.catis@ieee.org +1 732 562 5323

IEEE Volunteers and Staff assembled a Peer Review Team, lending their time and expertise to help the Boy Scouts of America (BSA) update their Electricity Merit Badge Pamphlet which had not been revised since 1996. Specifically, the team reviewed the electrical history, safety, terminology, and electrical experiment outlined in the pamphlet. Significant suggestions for improvement, corrections and updates were made. The IEEE website and the IEEE Virtual Museum were also added to the pamphlet as additional resources.

Ralph W. Russell II, of Richmond, Va.-based company Dominion, organized the peer review. Within the IEEE, Russell wears many hats. He is a member of the Educational Activities Board Pre-College Education Coordinating Committee, IEEE Technical Activities Board Components, Packaging, and Manufacturing Technology (CPMT) Society Board of Governors, IEEE-USA Energy Policy Committee, and Project Manager of the IEEE Regional Activities Board 2005 National Scout Jamboree Electronics Merit Badge Project to be held at Fort A. P. Hill, Va. Russell is also a former Scoutmaster and six-time U.S. National Scout Jamboree staff member. Members of the peer review committee include: Al Mouton, Cedar Creek, Texas, president of AGM Systems and Scouter; Lee Reed Sr., Richmond, Va., senior safety specialist for Dominion Resources Services; **Rick Tavan**, Truckee, Calif., retired Executive VP, Engineering and Operations at TIBCO, Electricity merit badge counselor, and father of two Eagle Scouts; Dan Ward, Richmond, Va., principal engineer for Dominion Virginia Power; **Paul Wesling**, Saratoga, Calif., vice president of publications for IEEE's CPMT Society, Eagle Scout, 15-year Scoutmaster, Venture Crew leader, BSA Heroism and Silver Beaver awards; Michael N. Geselowitz, Ph.D., director of the IEEE History Center and father of a Cub Scout, Cubmaster, Den Leader, Pack Committee Member, and Troop Committee Member.

The EAB Pre-College Education Coordinating Committee became involved in the review process as a result of a formal partnership proposal submitted to the BSA this past April. The Electricity Merit Badge pamphlet review is the first BSA activity completed by the EAB committee. **The IEEE CPMT Society conducted the peer review process.** When asked if



Paul Wesling KM6LH operates his Troop's "K6BSA" ham radio station on a Scout outing. Rick Tavan N6XI is station trustee.

this is an activity the group would engage in again, Russell said, "Yes. We were recently asked to do a peer review of the Computer Merit Badge as well." **The IEEE also plans to work with the global World Organization of the Scout Movement and The World Association of Girl Guides and Girl Scouts to form partnerships.**

Though this is a new activity for the EAB committee, IEEE RAB has been supporting the BSA National Scout Jamboree by coordinating the Electricity and/or Electronics Merit Badge Booths at the BSA Jamboree since 1981. The National Scout Jamborees are held every four years, and are usually attended by over 35,000 scouts and 5,000 adult leaders from the U.S. and the rest of the world. IEEE funding and volunteers were provided at the Jamborees held in 1981, 1985, 1989, 1993, 1997, and 2001. At the June IEEE Board Series, RAB approved \$50,000 in funding for the local geographic area to support the IEEE Electronics Merit Badge booth at the 2005 U.S. National Scout Jamboree.

Coordination of the Electronics Merit Badge Booth primarily comes from the IEEE Richmond, Virginia Section of Region 3. Region 3 has been a supporter of the project since 1981. Activities of the Region 3 volunteers include implementation of a web site to promote the electrical and electronics engineering profession to students, the development of instructional electrical and electronic programs and an electronics kit. A new website, <http://www.emeritbadges.org/> is currently under development.

CONFERENCE CALENDAR

Sept 1-4: **Conference on Engineering in Medicine and Biology Visits San Francisco**

The IEEE Engineering in Medicine and Biology Society holds its annual international conference at the historic St. Francis Hotel on Union Square in the center of San Francisco. The conference offers an opportunity for professional interaction in all areas relevant to biomedical engineering. In addition to the technical programs, professional tours will be available, affording attendees the opportunity to visit local research facilities in both educational and industrial settings. Workshops and tutorials are on Wednesday, 9/1, and local engineers may register for only the workshops. Keynote speaker is Paul C. Lauterbur, 2003 winner of the Nobel Prize in Medicine. Extensive exhibits are free to Bay Area professionals.

See our [GRID display page](#) for more details.

For more information, and to register online:

www.e-grid.net/conf/emb.html

Sept 13-15: **IEEE Petroleum and Chemical Industry Conference in San Francisco**

PCIC provides an international forum for the exchange of electrical applications technology related to the petroleum and chemical industry. PCIC attracts national and international participation. Held at the SF Marriott, the conference includes technical sessions, tutorials, and subcommittee meetings. Contact local committee chair Ken McFarland (Ken.McFarland@Crouse-Hinds.com) or visit the website:

www.ieee-pcic.org/Conferences/2004_San%20Francisco/

Sept 12-15: **Systems-on-Chip Addressed at IEEE SOC Conference (SOCC'04) in Santa Clara**

Sponsored by the IEEE CAS Society and held at the Santa Clara Hilton, the SOCC provides a forum for sharing advances in SOC technologies and applications. Systems-On-Chip (SOC) has become a dominant issue in today's ASIC industry and has created new challenges in Design Methods, Design Tools, Design Automation, Manufacturing, Technology, and Test. There are four days of tutorials, technical sessions, keynote talks, and vendor exhibits. See our [GRID display page](#) for more details, or visit

www.e-grid.net/conf/socc.html

Sept 21-23: **Wescon comes to Anaheim this year, with NANOWorld, EI EXPO, plus more**

The re-engineered Wescon/2004 brings together the technical programs of **NANOWorld**, the **Enterprise Integration EXPO**, the **Autonomous Vehicle Technology Showcase**, the Micromouse Competition, a Job Fair, and more. Vendor exhibits include pavilions on test and measurement equipment, components, RFID, EDA tools, engineering software, power components, and net-centric manufacturing integration. Best of all, the exhibits pass and most events are free; separate low-cost registration is required for NANOWorld and for Tutorials.

See our [GRID display pages](#) for more details, and the [Exhibits Registration Form](#) in this GRID.

For more information, visit the website:

www.e-grid.net/conf/wescon.html

Sept 27-30: **GSPx: the International Embedded Signal Processing Conference and Exhibition**

Held at the Santa Clara Convention Center, GSPx is specifically focused on embedded solutions, with a Technical Program and Technical Workshops covering the latest technological innovations for embedded systems. This year it includes an **Executive Summit** and exhibits. See our GRID display page for more details. For more information, visit www.e-grid.net/conf/gsp.html.

Oct 4-7: **SECON'04: IEEE Int'l Conf on Sensor and Ad Hoc Communications and Networks**

Held at the Santa Clara Marriott, SECON addresses the new generation of inexpensive mobile devices, sensors and actuators, and a broad range of applications.

See our [GRID display page](#) for more details, or visit

www.e-grid.net/conf/secon.html

Oct 18-21: **Integrated Reliability Workshop focuses on Semiconductor Reliability**

IRW'04 provides a unique environment for envisioning, developing, and sharing reliability technology for present and future semiconductor applications. All Workshop activities take place in a relaxed and rustic setting – the Stanford Sierra Camp – that promotes an atmosphere of interactive learning.

See our [GRID display page](#) for more details, or visit

www.e-grid.net/conf/irw.html

Oct 25-29: **BroadNets 2004 covers Broadband Networking in San José**

The IEEE Communications Society's first International Conference on Broadband Networks will be held locally at the end of October, with its focus on broadband networking for the entire gamut of next-generation networks – all the way from access networks (xDSL, Cable, EPON, Broadband Wireless, multi-Gigabit uplinks), to regional and metropolitan networks to wide-area core networks.

Visit the website: www.e-grid.net/conf/broadnets.html

The **CONFERENCE CALENDAR** is a service to our IEEE Members. It outlines upcoming IEEE workshops and conferences in the Bay Area. Please submit items to the GRID Editor: editor@e-grid.net.

Conferences are also encouraged to purchase display space in the **GRID.pdf** and publicize their events on our website and in our **e-GRID** email notification service. For the Conference Publicity flyer, please download:

www.e-grid.net/docs/conf-flyer.pdf

Oct 5: **IEEE Short Course: "Mandated Pb-Free Solder Assemblies: Exploring the Transition's Impact on Product Reliability"** - in Cupertino

As governments in Europe and Asia begin the phase-in of their "Removal of Hazardous Substances" regulations, electronics designers and manufacturers are in the final stages of changing from classic tin-lead solders to various compositions of Pb-free solders. The new solders present us with considerable uncertainty. Will our computers, wireless devices, and other products show considerably lower reliability over the next few years? What are the risks for which we must be planning?

The focus in this special one-day event is on the technical engineering impact of the transition. What do we know, what do we not know, and where are the remaining significant risks?

More information: www.cpmt.org/scv/

Oct 7-8: **LEOS Workshop: SBIR Grants for the Curious Engineer in Business**

The US government and other domestic agencies provide funding for projects and assistance for R&D to small businesses under the Small Business Innovative Research (SBIR) program. Funds from tens to hundreds of thousands of dollars are available for work on topics ranging from nanotechnology to astronomy.

This workshop is for engineers, entrepreneurs, and small-business executives who wish to learn how to "read between the lines" of government solicitations and how to win grants and contracts. This two-day Workshop will be held in Sunnyvale, at the National Semiconductor Credit Union meeting rooms.

More details: www.ieee.org/sbir/

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IEEE Wescon/2004 Registration Form

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9-94566

How to Register

Mail Deadline - August 20, 2004
 IEEE Wescon 2004
 1230 Rosecrans Ave., Suite 100
 Manhattan Beach, California 90266

FAX Deadline - September 16, 2004
 310-643-7328
 Please do not both fax and mail.

Electronically www.wescon.com
 After August 20, 2004 badges will be held for pick-up at the Anaheim Convention Center.

On-Site
 Bring this form with you to Wescon/2004 for FREE admittance.

Exhibit Floor and "No Charge" Conference Events

Wescon Exhibits (Tues., Weds and Thurs – September 21-23)

- ___ K1 Technology, Security and the Networked Economy N/C
- ___ K2 Spintronics N/C
- ___ K3 Coming to Grips with Complexity in System Dvlp N/C
- ___ K4 "See Mars in 3D" N/C
- ___ K5 Convergence of Nanotechnology, Information & Business N/C
- ___ P1 Managing Global Supply Chain Security (Panel Discussion) N/C
- ___ P2 RFID in Action (Panel Discussion) N/C
- ___ P3 Testing High Speed Communication Signals (Panel Discussion) N/C
- ___ SC1 Cost Based Risk Analy. & Performance Measures for SC Security N/C
- ___ SC2 RFID: The Adaptive Supply Chain N/C
- ___ DA1 Structured ASICs—Caught Between a Rock and a Hard Place N/C
- ___ TM1 Jitter Analysis of High Speed Signals N/C

- ___ TM2 Getting More Out of Your Digital Oscilloscope N/C
- ___ TM3 Overcoming Noise in Data Acquisition... N/C
- ___ TM4 Triggering Solutions That Capture Elusive Events N/C
- ___ TM5 EMC Standards and Regulatory Update N/C
- ___ TM6 The Expanding Role of Vector Network Analyzers... N/C
- ___ TM7 Quick Signal Integrity Troubleshooting... N/C
- ___ TM8 New Tools for CANbus Signals N/C
- ___ PW1 A 5-Year Power Technology Roadmap N/C
- ___ PW2 Practical Considerations for Digital Control of Power Converters N/C
- ___ PW3 Take the Low Power Challenge... N/C
- ___ BC1 Roadmap: What Lies Ahead in the Electronics Industry N/C
- ___ BC2 How Will the Semiconductor Industry Change... N/C
- ___ BC3 Field Sales & Distribution, Conflict or Necessity N/C
- ___ BC4 How to Measure ROI from Sales Promotion N/C

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	IEEE Member	(circle one)	Non-Member
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___ T2 Fundamental Concepts of Signal Integrity...	\$155		\$205
___ T3 Design for Testability, Built in Self Test	\$305		\$405
___ T4 Testing for EMC Compliance – Approaches & Techniques	\$155		\$205
___ T5 Testing Strategies for Today's Complex Circuits	\$155		\$205
___ T6 Switch-mode Power Conversion	\$895		\$995
___ T7 IEEE Consultants Network Workshop	\$75		\$100

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Persons under 16 years of age not admitted. Students 16 or older admitted on Thursday, September 23 only.

Special Assistance: If you require special assistance covered under the Americans with Disabilities Act, please call (800) 877-2668, Ext. 218 by September 3, 2004.

For Complete Conference Information and Registration visit www.wescon.com or call 800-877-2668 • 310-524-4100