IEEE GRID .pdf

DECEMBER 2003

Winter in the Bay Area . . .

The Storm door is Open!

IEEE GRID.pdf

December 2003 • Volume 50 • Number 12

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 on 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 . . .

The Council Office has Moved!

Last month the Council, in a cost cutting action, selected a new location for the office at considerable savings. Effective December 1 the new headquarters for SFBAC can be found at . . .

345 Forest Avenue
Palo Alto CA 94301

"It's a great new location," according the Council Manager Marilyn Turner. "It's just three blocks away from our University Avenue building and is in the Laning Chateau at the corner of Forest and Gilman in downtown Palo Alto."

The phone number and fax number remains the same. There is a parking structure on Bryant Street between Hamilton and Forest.

This is the month you are asked to vote for your Section officers. If you haven't already done so, please do it today. The ballot is contained in the November PDF edition of the Grid. Print out the ballot page, cast your vote for the officers in your Section, and mail it to the Council Office.

The results will be announced in the January issue and a complete roster of all Section and Society Chapter Officers will also be published in that issue. We suggest you print those pages and keep as a handy reference.

As we approach the end of 2003 and look forward to a new season of IEEE activities, the members of the Bay Area Council, Council Office Manager Marilyn Turner, and your Grid Editor wish you a wonderful holiday season.

Doug Davolt

NOTE: IEEE 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.

SCV Section

WEDNESDAY DECEMBER 3

WEDNESDAY DECEMBER 3
SCV Section
Subject: **Annual Banquet**
Speaker: Brian Fuller (EETimes)
Time: 6:30 p.m.
Place: Faz's Restaurant, Sheraton Hotel, Hwy 237 and North Mathilda, Sunnvale - 408 752-8000
Cost: $40 per person
RSVP: (by 11/29) ma.turner@ieee.org or 650 327-6622 or Rufino Olay, 408 879-7741 or r.olay@ieee.org

Signal-to-Noise: Getting the most from information sources in an age of information overload.

The Santa Clara Valley Section annual banquet will be held on December 3 in lieu of the regular business meeting. Guest speaker is Brian Fuller, editor-in-chief of EETimes who will be speaking on Signal-to-Noise: Getting the most from information sources in an age of information overload. We'll also be honoring new IEEE Fellows, special awards recipients and student science fair winners.

This year's dinner will be a buffet followed by the program. The executive committee encourages chapter officers and chapter members as well as their spouses to attend this year's affair. The SCV section is subsidizing this activity and the cost to attendees is $40.

Brian fuller says the amount of information available to the average computer user in a day exceeds that available to people in entire lifetimes not too long ago. The kept promise of Moore's Law has left us with an unintended consequence of having to sift through mounds of data and avoid info-distraction as we navigate projects in a timely manner. Clearly the firehose is drowning us. What's worse, a hierarchy of information has emerged in which the least-valuable is the most plentiful; the most valuable the hardest to find. How do high-tech publishers grapple with this overload and adapt to an ever-changing landscape of media choices while trying to maintain and expand their traditional audiences? (Hint: it takes a lotta antacid pills).

Brian Fuller has been a professional journalist for 20 years, 10 years more if you count from the time he printed his own newspaper in junior high school, complete with horse-racing results. He began officially in 1983 as a general assignment reporter in Indiana for United Press International.

OEB Communications Society

SATURDAY DECEMBER 6

SATURDAY DECEMBER 6
OEB Communications Society
Subject: **Seminar: SIGNALs and DSPs Everywhere**
Speaker: Mr. John Zarrella (Impressima Inc)
Time: 9:00 a.m. – 12:30 p.m. (Registration and coffee at 8:30)
Place: 6101 Bollinger Canyon Road, San Ramon.
RSVP: Required, OEB Communications Society, c/o J & M Consultants, PO Box 1513, San Ramon CA 94583 (include your address, email and telephone number)
Fees: $15 for IEEE members, $25 for non-members, $5 for IEEE student, retiree and unemployed members, $10 for student, retiree and unemployed non-members Registration must be received by December 1, 2003, late or on-site registration fee of $5 will apply after December 1. Make check payable to the OEB Communications Society
Web: http://www.comsoc.org/oeb/

Seminar: Signals and Dsps Everywhere

Signals are everywhere – in our cars, in our homes, in the air around us, and even in our bodies. Without signals, we wouldn't be able to move our fingers, hear our favorite songs on the radio, watch television, or talk on our mobile phones. Some signals are natural – like our nerve impulses – but many are manmade. Ever since the invention of telephone and radio transmitters, engineers have been working on processing signals. For years they have been trying to make music sound more life-like, to make the same wires carry more telephone conversations, and to make it possible for doctors to look inside our bodies without inconveniencing us.

Today, with the availability of powerful inexpensive microprocessors, more and more signal processing can be included in just about any product. Thus, we've seen the CD revolutionize music reproduction and the DVD play a similar role in video. You can now take photos without film, remove red-eye right on your laptop, and e-mail them to your friends without paying for duplicate prints.

So, what is Digital Signal Processing (DSP) and how can it do all these things? John Zarrella will explain the basics of a DSP on December 6 without getting into the mathematics of signal processing. Back by popular demand, John Zarrella, president of Impressima Inc., conducted the highly popular programming language seminar last year. He is back to explain the basics of Digital Signal Processing.

You'll learn: What signal processing is all about; Why DSP is so powerful; How semiconductor advances have made DSP ubiquitous in many products today; The difference between analog and digital signals; How signals are sampled and converted; and How DSP is used in important applications such as music and video.

This course is specifically designed for professionals who know little or nothing about Digital Signal Processing. If you're a manager, sales professional, software designer, or engineering undergraduate who'd like to learn how DSP is invading almost all areas of electronic design, you owe it to yourself to attend.

Mr. Zarrella earned his BS in mathematics and physics from Carnegie-Mellon University. He has designed hardware and software systems for many industrial applications including transportation, instrumentation, wireless, and process control. John designed software for one of the early DSP processors – the Zoran ZR34161 Vector Signal Processor. Before founding Impressima, John was in charge of the OEM Systems and Peripherals Group at Intel Corporation.

SCV EMC

TUESDAY DECEMBER 9

TUESDAY DECEMBER 9
SCV Electromagnetic Compatibility Society
Subject: **Down Memory Lane - 30 Years of EMI Field Testing**
Speaker: William H. "Bill" Parker, PE, NCE, (Parker EMC Engineering)
Time: Social at 5:30 p.m., presentation at 7:00
Place: Applied Materials Bowers Cafe, 3090 Bowers, Santa Clara
RSVP: Not required

Down Memory Lane - 30 Years of EMI Field Testing

Bill Parker will be the featured speaker at the December 9 meeting of the Santa Clara Valley EMC Chapter. He will present an overview of his EMI field testing experiences, to include military, commercial, medical, and aerospace test samples, for both emissions and susceptibility, from 1973 to the present.

He will discuss common field testing problems, solutions, and "significant unplanned occurrences." Test samples included engine-generators, motor-generators, uninterrupted power systems, medical diagnostic equipment, airplanes, the space shuttle Challenger, and a navy submarine. Test sites included military bases, remote radar sites, hospitals, broadcast studios, and airports. Site conditions ranged from hot to frigid, dusty and dry to heavy downpours, and included several blizzards. He will end with a discussion of significant lessons learned.

Bill Parker has owned and operated Parker EMC Engineering since he founded it in 1989. He served in the U.S. Army from 1965-1969, and graduated from North Carolina State University in 1973. He began work as an EMC engineer at Genisco Technology Corporation that same year, under the tutelage of Steve Jensen. At Genisco, Bill had varied assignments, including powerline filter design, EMI lab testing, EMI lab supervision, EMI field testing, EMC consulting, and departmental management.

In 1988, he was promoted to director of engineering at Genisco. In 1989, he resigned to start his current EMC consulting business. Bill has also taught EMC seminars since 1982 and has provided consulting, testing, or teaching services throughout the USA, and in eight foreign countries. He is a registered professional electrical engineer in California, a NARTE certified EMC engineer, a senior member of the IEEE, and a past vice president, board member, and distinguished lecturer of the IEEE EMC Society.

SCV EMS

WEDMESDAY DECEMBER 10

WEDNESDAY DECEMBER 10
SCV Engineering Management Society
Subject: **Keys to Successful Global Outsourcing**
Speaker: Narendra Dev (vCustomer Corporation)
Subject: **Management Across Company and Country Borders – The Sea Launch Approach**
Speaker: John Steinmeyer (Sea Launch Company)
Time: Forum at 6:00 p.m., dinner at 7:00, after dinner presentation at 7:45
Place: Wyndham Garden Hotel, 1300 Chesapeake Terrace, Sunnyvale - near Lawrence Expressway and Hwy 237
RSVP: http://www.ieee-scv-ems.org
Cost: (with reservations Dec 5 or before) $20 (IEEE member), $25 (non member), $5 surcharge thereafter. (Cash or check at the door)
Student IEEE members - $5
Info: Rich Hendrickson, 408 203-3462

Managing Offshore Resources

International projects are unavoidable these days – from labor tasking moving overseas, to collaborating with international partners and vendors. The Santa Clara Valley Engineering Management Society addresses this phenomenon with a before-dinner forum on project outsourcing offshore. And following networking and a sit-down dinner, the after dinner topic will be on managing an enterprise composed of multi-national companies with high seas operations.

Before-Dinner presentation -

Keys to Successful Global Outsourcing

This hands-on approach to program management gives guidance for those who are tasked to outsource projects offshore. It will feature: investigation of the business problem for offshore outsourcing; evaluation of the best country for offshore outsourcing; vendor RFP process; vendor selection process; and omplementation.

Issues addressed in this presentation will include: language and accent issues; training the offshore partner; spreading the risk between partners; building the infrastructure for seamless work; using appropriate tools and systems for managing the partner; and writing a contractual agreement to meet performance criteria.

Our forum speaker, Narendra Dev, is VP of business development at vCustomer Corporation. He has more than 20 years of senior operations management experience in customer service, IT hosting and network operations in enterprise companies and start-ups. He has set up offshore contact centers for Hewlett-Packard, Broadband Office, Peoplesoft. and others.

Narendra is an instructor at several universities on the topics of offshore outsourcing, establishing call centers, and customer support. He has a Masters in Physics from Delhi University and an MBA from the Indian Institute of Management, India.

Continued next page

WEDNESDAY DECEMBER 10

After-Dinner presentation -

Management Across Company and Country Borders – The Sea Launch Approach

Many companies are creating partnerships with other companies to optimize the product and production cycles. The challenges are even greater when you cross country borders. Not only are there different languages and laws but a whole new set of standards and customs to deal with. One organization that is successful in this process is the Sea Launch Company, LLC.

Sea Launch is an international company comprised of American, Russian, Ukrainian, and Norwegian partners that provide an innovative, cost effective, heavy lift launch service for commercial customers. Building on proven performance and flight-tested hardware from the expertise of each of these companies, Sea Launch offers superior value, high performance and fully integrated launch services.

In addition to reliable, enhanced performance capabilities, Sea Launch is able to offer competitive cost advantages. The Sea Launch approach can establish the ideal launch location at the equatorial launch site at 154 deg W. longitude. This provides the most direct route to geostationary orbit, offering maximum lift capacity.

This presentation will address how Sea Launch has established the management team and approach that has made it successful. The Sea Launch operation is dynamic and constantly changing. There have been some areas that were not optimum and change was instituted. This ability to meet the management challenges afforded by this unique partnership, and to adapt to the necessary changes in plan have been essential to success.

Our speaker is John Steinmeyer, director of mission integration for the Boeing Sea Launch Program. In this capacity, John leads a team of Boeing mission managers and technical specialists responsible for the complete integration of spacecraft requirements with the Sea Launch system. John reports directly to the Sea Launch chief systems ngineer.

Prior to his assignment on Sea Launch, John served as executive staff assistant with Boeing Expendable Launch Systems for 14 months before and after the inaugural Delta IV launch, coordinating enterprise strategic and operational management processes. Duties included budgeting and performance assessment, resource management, affordability, and process improvement initiatives.

John was selected for this role while serving as a major subcontract program manager, responsible for the procurement and performance of rocket engine systems for the Delta Launch Vehicle program. He previously managed foreign procurements, on site at Mitsubishi Heavy Industries in Nagoya, Japan.

Before his transition into supplier management, John worked in the Delta Program Structural Engineering group, where he led integrated product development teams responsible for the integration of spacecraft onto the Delta Launch Vehicles. He also directed IRAD activities relative to advances in Delta Structures Design. He began his career in 1987 with the former McDonnell Douglas Space Products Division in the Mechanical Systems group, leading to test director for payload fairing separation tests.

SCV Communications Society

WEDNESDAY DECEMBER 10

WEDNESDAY DECEMBER 10
SCV Communications Society
Subject: **Optical Networking Technologies: Control Plane Concepts and Standardization**
Speaker: Dr. Greg Bernstein (Grotto Networking)
Time: Pizza and sodas at 6:30 p.m., presentation at 7:00
Place: National Semiconductor Credit Union, Bldg. 31, 955 Kifer Rd., Sunnyvale
Fee: $1 donation to partially cover food cost
RSVP (required) rsvp@comsocscv.org
Web: http://www.comsocscv.org

Optical Networking Technologies

The rollout of "pre-standard" optical control plane technology in production networks by carriers of the likes of AT&T, Cable and Wireless, Sprint, and others, indicates the inherent demand for the functionality that an optical control plane can offer.

Greg Bernstein, of Grotto Networking, will discuss this topic at the December 10 meeting of the Santa Clara Valley Communications Society. His overview emphasizes the key concepts or functionalities that such a control plane brings to optical networks and why they are important in the optical context. In addition, where concepts have been used previously in other contexts, such as IP datagram routing or voice telephony signaling, he points out key differences between these and the optical context.

Dr. Bernstein is currently a consultant with Grotto Networking. He was previously a senior technology director at CIENA Corporation, looking over network control and management architectures. He also directed all software development at Lightera Networks (now Ciena's Core Switching Division) where his team applied signaling and routing techniques to the control of networks of Lightera switches (now the Ciena CoreDirector).

Dr. Bernstein has filed numerous U.S. patents in the areas of optical networking, packetized voice, congestion control and encryption. His book Optical Network Control: Architecture, Protocols, and Standards, co-authored with Bala Ragagopalan and Debanjan Saha, has recently been released published by Addison-Wesley-Longman (AWL).

SCV CPMT

WEDNESDAY DECEMBER 10

WEDNESDAY DECEMBER 10
SCV Components, Packaging & Manufacturing Technology
Subject: **Outlook for the Semiconductor Packaging Market for 2004**
Speaker: Jim Walker (Dataquest/Gartner Group)
Time: Seated dinner served at 6:30 p.m., presentation at 7:30
Place: Ramada Inn, 1217 Wildwood Ave -Fwy 101 frontage road, between Lawrence Expressway and Great America Parkway Sunnyvale (800 888-3899)
Cost: (dinner) $25 if reserved before Dec. 6; $30 after and at door; vegetarian available)
RSVP: For dinner and meeting, please use our PayPal dinner registration at www.cpmt.org/scv/ - for meeting only: cpmt.scv.sec@ieee.org

Outlook for the Semiconductor Packaging Market for 2004

2002 saw the packaging and assembly outsourcing industry grow 18 percent, while the semiconductor industry, as a whole, grew a meager 1 to 2 percent. As we come to the end of 2003, packaging continues to be the "Comeback Player of the Year." As 2004 dawns, we expect better growth now for the entire semiconductor industry. Packaging will continue to drive innovation, and System In Package (SIP) is one critical technology that has risen above a transient market.

Possible issues to be addressed include: What is the Semiconductor Packaging forecast for the upcoming years? What is the growth of the Semiconductor Assembly and Test Services (SATS) Market? What role will the convergence of packaging and board level assembly play in the future of high-tech manufacturing and the growing MEMS industry? What affect will SIP have on the packaging market? Will system-in-package demand spark renewed growth in the mulit-functional Mobile Electronics Industry and who will the manufacturer be? Is the new "killer" application really an application? Or, is it a technology?

Jim Walker will discuss this at the December 10 meeting of the Santa Clara Valley CPMT chapter. Jim is vice president of research for Gartner-Dataquest's Semiconductor Manufacturing and Emerging Technologies Group. Jim has been heavily involved in the science of materials technology and semiconductor manufacturing for over 25 years. At Dexter Electronic Materials and E.I. DuPont, he performed research, development, quality assurance, and technical service utilizing polymeric materials for adhesive, composite, aerospace, electronic, and semiconductor applications.

From 1982 to 1989, Mr. Walker performed various roles at National Semiconductor, including serving as surface mount packaging marketing manager, where he coordinated the packaging direction of the corporation and licensed TAB and TapePak™ technology. Upon his departure from National Semiconductor, He co-founded Hana-USA, a contract semiconductor packaging company, acting as vice president of sales and marketing.

A founding member of the Surface Mount Technology Association (SMTA), Mr. Walker served as secretary and treasurer before becoming president in 1990. Jim currently authors a quarterly column for *Advanced Packaging Magazine* and the *MEPtec Journal*. He has authored over 50 technical articles and professional papers on semiconductor packaging and surface mount technology, and has lectured on advanced VLSI packaging with the University of California, Berkeley.

Jim is an advisory board member for Bridgewave Communications, Inc., Surfect Technologies, and the MicroElectronic Packaging and Test Engineering Council (MEPTEC). Mr. Walker holds memberships in the SMTA, the Society for the Advancement of Materials and Process Engineering (SAMPE), and the American Society for Quality Control (ASQC). He received a BS in chemistry from California State Polytechnic University and performed post-graduate work at California State University at Los Angeles.

IEEE Consultants Network

TUESDAY DECEMBER 16

TUESDAY DECEMBER 16
IEEE Consultants Network of Silicon Valley
Subject: **Venture Capital –How to get funding from VC's**
Speaker: Mr. Samir Ajmera (TechStock)
Time: Networking at 7:30 p.m., presentation at 7:30
Place: Sheraton Hotel, 1100 North Mathilda Avenue, Sunnyvale (408 745-6000)
RSVP: Not required. Seating is limited so arrive early.
Web: www.ieee-sv-consult.org

How to Get Funding from Venture Capitalists

Mr. Samir Ajmera from TechStock will discuss the process of fundraising through venture capital at the December 16 meeting of the IEEE Consultantts Network. He will introduce the current funding environment and discuss what a first-time entrepreneur needs to do to prepare for their fundraising efforts.

He will tap into the minds of venture capital investors and describe what makes an executive summary powerful and effective and will share insights on how to describe your product, its market, value proposition, and competitive advantage in the most tactful yet informative way. In addition, Mr. Ajmera will give tips on the do's and don'ts when approaching a venture capital firm with your business proposal.

When is the right time to start a company? Where do I go to get funding? What does a venture capital firm need to see to evaluate my company? What do I need to include in my Executive Summary? These questions often perplex the minds of the first-time entrepreneurs.

In today's tough funding environment, getting capital to support your start-up is not easy. How do you even interest a venture capital firm to talk to you about your product?

The first logical step, as well as most important, is to prepare a powerful and persuasive executive summary for your investors to review. Your executive summary will be the most important piece of document that is responsible for luring the interest of your investors. A poorly written executive summary will prolong your fundraising process, if not ruin it completely. If your summary is unattractive to the investors, that will spell the end of your fundraising attempt for you, and often enough, it also spells the end of the start-up company for many entrepreneurs.

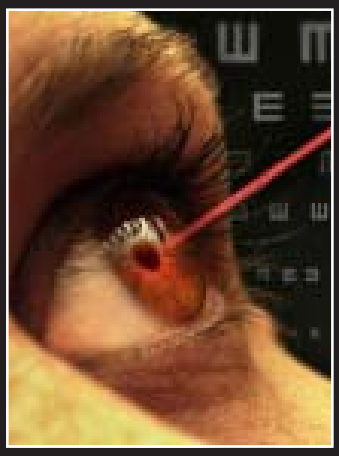
TechStock is a strong financially-backed venture capital firm focused on concept and seed stage investments in the technology sector such as semiconductor, telecom, software, and wireless industries. TechStock specializes in investing in concept and seed stage startups with a defensible technology and a value proposition. Mr. Ajmera is an investment analyst and a member of the investment committee at TechStock. He conducts the initial evaluation of a company and assists in due diligence at TechStock.

SCV LEOS and the OSNC

TUESDAY DECEMBER 16

TUESDAY DECEMBER 16
SCV Lasers & Electro Optics Society with OSNC
Subject: **How the Laser Came to Be:**
A Christmas Lecture
Speaker: Prof. Anthony E. Siegman (McMurtry Professor of Engineering Emeritus, Stanford University)
Time: Dinner at 6:00 p.m., presentation at 8:00
Place: Dinner at the Olive Garden, 2515 El Camino Real, Palo Alto (650 326-5673) presentation at Xerox PARC Auditorium, 3333 Coyote Hill Blvd., Palo Alto
RSVP: Not required

How the Laser Came to Be: A Christmas Lecture



Nearly every year for the past 200 years the British Royal Institution has presented a set of Christmas Lectures on science intended for families and young people. Sir William Bragg opened his 1931 lectures, for example, with the striking phrase, "Light brings us news of the universe."

In this Christmas lecture on December 16, sponsored by the Optical Society of Northern California, Prof. Anthony E. Siegman will try to explain what Bragg meant by this, and how knowledge about the physical universe, initially brought to us by light, eventually led to the invention of the laser, a device which creates new forms of light.

Lasers, in turn, now bring us not only ever deeper knowledge about our physical universe through strikingly new scientific applications, but also news of the entire human intellectual universe through the wonders of fiber optics, the Internet, and the World Wide Web.

Anthony E. Siegman is McMurtry Professor of Engineering Emeritus, Stanford University. Prof. Siegman was born in rural Michigan in 1931, received undergraduate and graduate degrees from Harvard, UCLA and Stanford, and then served on the electrical engineering and applied physics faculties at Stanford from 1956 through 1998.

Continued next page

During his faculty career he supervised some 40 PhD students, wrote three books and many technical papers including a widely known text and reference book on LASERS, and received many professional honors including election to the National Academy of Engineering in 1973 and the National Academy of Sciences in 1988.

Following his retirement in 1998 he served as president of the Optical Society of America during 1999, and has since been engaged in technical writing, professional society activities, and technical and legal consulting.

OEB Power Engineering Society

WEDNESDAY DECEMBER 17

WEDNESDAY DECEMBER 17
OEB Power Engineering Society
Subject: **NFPA 110 Standard for Emergency and Standby Powers (2002 Edition)**
Speaker: Diep Nguyen, PE (DTN Engineers Inc.)
Time: Social at 5:00 pm, presentation at 5:30, dinner at 6:20 (Charcoaled chicken, spring rolls, chowmein , soft drinks and desert) **FREE of charge**
Place: East Bay Municipal Utility District (EBMUD) Headquarters, 375 Eleventh Street, Second Floor Conference Room, Oakland, near 12th street BART station
RSVP: Required for food service arrangements. Limited to 40 attendees due to security reasons. For reservation call ToNhu Le, EE: 510 267-0441 or e-mail: NHULE@DTNEngrs.com

NFPA 110 Standard for emergency and standby powers (2002 Edition)

Power system reliability has been a growing concern to the public since the U.S. experienced the blackout on August 14, 2003 that darkened parts of Canada and eight states from New York to Ohio. While the San Francisco Bay Area power grid is relatively stable due to continued planned improvements of transmission lines and local generation, the existing infrastructures at distribution voltage (12kV) remain vulnerable to catastrophic events such as earthquakes and fires. Recognizing this fact, most private companies and public agencies have invested a considerable amount of money in standby power to protect their interests.

In September of this year, at the regular OEB PES monthly meeting, Mr. Dev Paul, PE, of EarthTech (formerly Kaiser Engineers) presented IEEE Standard 446 Emergency and Standby Power System for Industrial and Commercial Applications. After this presentation, there were various requests for a follow-up presentation with respect to NFPA Standard 110 (2002 Edition) which also deals with the same subject.

cONTINUED NEXT PAGE

WEDNESDAY DECEMBER 17

OEB PES is pleased to have Mr. Diep Nguyen, PE, present this subject.at our year-end celebration meeting held at EBMUD on December 17. Diep will discuss NFPA Standard 110 with respect to practical design and consideration in selecting proper type of standby power system for a specific facility. He will provide updates regarding utility momentary paralleling, air quality regulations and permitting issues for standby power facilities.

Diep has been a practicing electrical engineer for almost 30 years. He holds BSEE and MSEE degrees in power system engineering and is licensed to practice several branches of engineering in five states. He is a senior member of IEEE, ISA, and a member of NFPA Technical Committee. He currently works for DTN Engineers, Inc. where he holds the position of president.

WEDNESDAY DECEMBER 17

WEDNESDAY DECEMBER 17
SCV Components, Packaging & Manufacturing Technology
Subject: **Short course - Thermal Test Methods for Integrated Circuits**
Speaker: Bernie Siegal (Thermal Engineering Associates, Inc.)
Time: 12:00 Noon - 5:00 p.m.
Place: UC Extension, 1180 Bordeaux Drive, Sunnyvale (near Highway 237 and Mathilda)
Fee: $249 ($225 for IEEE Members)

Short Course: Thermal Test Methods for Integrated Circuits

A gating item in the development of higher performance electronic systems is thermal management of integrated circuit (IC) power dissipation. As a basis for most thermal management solutions, knowledge of the IC thermal performance is essential. This short course is designed for device, packaging and system design professionals who want an introduction to the "art" of integrated circuit thermal measurements. In addition to complete test method descriptions, the rationale leading to the need for the standards and the use of the thermal data produced by the standards will be covered. Details of junction temperature measurements will be covered and reference sources will be provided.

Key Topics:

Thermal Management Challenges	Thermal Test Methods
Current Status & Road Map	Junction Temperature
Objectives	Measurement
Thermal Resistance	Calibration
Definition	Dynamic Test (Application Die)
Types	Static Test (Test Die)
Equivalent Circuit	Thermal Data Application
Standard Reference Environments	Detailed Thermal Model
Definitions	Compact Thermal Model
Mounting Surface	2-Resistor Model
Environments	Applying Standards Data

Course instructor Bernie Siegal, founder and president of Thermal Engineering Associates, Inc. (TEA), has been actively involved in semiconductor thermal measurements for over 35 years. He has been the principal author of several Mil Std., SEMI and JEDEC standards and is currently an active participant of the EIA JEDEC JC15.1 subcommittee dealing with IC package thermal issues. He has developed thermal test systems for most commercially available semiconductor devices. He has authored over 40 technical articles, conducted numerous seminars and holds patents in various technical fields. Bernie is the founder of SEMI-THERM and is past chair of the Santa Clara Valley chapter of IEEE CPMT.

OEB Communications Society

THURSDAY JANUARY 15

THURSDAY JANUARY 15
OEB Communications Society
Subject: **Layer 4-7 Load Balancing Switches**
Speaker: Gopala Tumuluri (Foundry Networks)
Time: Pizza at 6:30 p.m., presentation at 7:00
Place: Bishop Ranch 1, 6101 Bollinger Canyon Road, San Ramon (just off I-680)
RSVP: (by Jan. 14) oeb@comsoc.org or 925 968-0979) for pizza order
Info: Victor Stepanians, 925 968-0979 or email: vicstepanians@ieee.org
Web: http://www.comsoc.org/oeb/

Layer 4-7 Load Balancing Switches

Many of you may recall the multi-billion dollar acquisitions of ArrowPoint Communications and Alteon Web Systems and by Cisco and Nortel respectively. While those glory days are history, the market for "load balancing Switches" continues to grow, as IP and Web applications have become the norm rather than the exception.

Today's Enterprises and Service Providers face numerous challenges in managing mission-critical web applications. These challenges range from protecting the servers from increasing security threats to improving the high availability and manageability of applications to scaling computing capacity with low-cost commodity servers. Layer 4-7 load balancing switches have evolved to be the leading choice of the world's most demanding customers to secure and scale server farms.

Gopala Tumuluri will address this topic at the January 15 meeting of the Oakland East Bay Communications society. His presentation will help you understand the use of load balancers to scale web application server farms to support millions of clients. You will get an update on load balancing technology and applications from one of the pioneers in the load balancing market.

Gopala Tumuluri is the product marketing manager at Foundry Networks for the Multi-Layer Switching Business Unit. Foundry is a provider of high-performance end-to-end switching solutions for enterprises and service providers.

Mr. Tumuluri has been in the networking industry for more than eight years. Prior to joining Foundry in July 2003, he held product management and marketing, and engineering positions at Elematics, Calient Networks, and FORE Systems. He graduated with an MBA from Carnegie Mellon University in December 2000, and an MS degree in computer science from the University of Kentucky. The chapter will continue its 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.

NEWS from . . . .

IEEE★USA

Jim V. Leonard, PE
2003 IEEE-USA President

Nanotechnology Research and Development Act

Passage by the U.S. Congress of *The Nanotechnology Research and Development Act* will "help fuel future economic growth, enhance public health and the quality of life, as well as sustain U.S. leadership in science, engineering and technology" said Jim V. Leonard, president of IEEE-USA. "Nanotechnology research and development is in its infancy, but the promise of nanotechnology to usher in a new industrial age is unquestionable," Leonard added. Nanotechnology can be described as the observation and manipulation of materials at the molecular and atomic levels.

The U.S. Senate approved the nanotechnology bill on 18 November, followed by the U.S. House of Representatives on 20 November. The legislation is expected to be signed into law by President Bush. The Act creates a National Nanotechnology Research Program to support long-term nanoscale R&D, increase America's competitiveness in nanoscale technology, and promote effective education for the next generation of nanotechnology professionals. The legislation authorizes $3.7 billion to be spent over the next four year for such agencies as the National Science Foundation, Energy Department, and NASA. It also requires a panel of experts to advise the President on nanotechnology issues. In addition, a new American Nanotechnology Preparedness Center will be established to study the potential effects of nanotechnology.

According to IEEE-USA President Leonard, "Over the next decade, nanotechnology will lead to significant advances in electronics, defense and homeland security, agriculture, communication, biology, diagnostic medicine and structural." He noted that innovation stemming from advancements in nanotechnology could lead to new generations of microelectronics that have the capacity to store information equal to the Library of Congress, as well as point to prosthetic and medical implants that are molecularly designed to interact with cells of the human body.

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