LOS ANGELES

1884 1984
A CENTURY OF ELECTRICAL PROGRESS

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Wescon Expands to Four Days and Multiple Show Locations

Story, Schedules begin on Page 9

VOTED YET? **Ballots were mailed September 1; they are due back November 1. Dig 'em out! See story on Page 27. Be sure to vote!**

Mailed September 23

ENHANCING ENGINEERING CAREERS . . .

Third IEEE Careers Conference Planned October 27-28 in Palo Alto, CA

A conference presenting viewpoints on how engineers can achieve long and satisfying careers is being scheduled by the United States Activities Board (USAB) of The Institute of Electrical and Electronics Engineers (IEEE) October 27-28, 1983, in Palo Alto, CA. The Third IEEE Careers Conference has the theme "Enhancing Engineering Careers by Fulfilling Individual and Organizational Goals." According to Wallace D. Decker, Conference Chairman, it will provide information on: (1) how to bring personal goals and company goals closer together; (2) how companies are responding to career issues in engineering; (3) how enhancing engineer's careers can be beneficial to both engineers and companies; and (4) how professional societies can support more fulfilling careers for their members.

On Thursday, October 27, two evening workshops at the conference will center on preparing engineers and engineering managers for their respective roles as well as "Overcoming Engineering Career Roadblocks." In addition, on Friday, October 21, a Career Strengthening Workshop will be held on non-technical aspects of engineering performance.

Mr. Decker, who is a Senior Engineering Staff Member at Lawrence Livermore National Laboratories, adds that the following individuals are encouraged to attend: practicing engineers, corporate managers and supervisors, human resources managers and education directors, social and behavioral educators.

On Thursday, October 27, Session I is entitled "Research Update on Engineers' Careers." It is chaired by Paul Thompson, School of Business, Brigham Young University. Session II covers "Career Transitions: Causes, Effects, and Management." It is chaired by Donald B. Miller, Consultant, Human Resources Management, Santa Clara, CA. Session III concerns "Mentoring." It is chaired by William T. Sackett, Vice President, Corporate Technology Center, Honeywell, Inc. Session IV covers "Viewpoints on Engineer Utilization." It is chaired by John F. Drum, District Manager, Engineering Professionalism, AT&T.

On Friday, October 28, Session V (chaired by Marlin P. Ristenbatt, Research Engineer, University of Michigan) is entitled "Career Enhancement Through Improved Workplace Practices." Session VI (chaired by Charles Huse, Corporate Engineering Director, Hewlett Packard) covers "Who is Responsible for My Career?" IEEE President James B. Owens will close the conference with a luncheon address.

The conference will be held at the Hyatt Rickeys in Palo Alto. Fee for IEEE Members is $160; $185 for non-members. Conference registration includes the Thursday evening workshops; the fee for the evening workshops is only $15. Friday's Career Strengthening Workshop fee is $35. Registration information is available from William R. Anderson, IEEE/USAB, 1111-19th Street, NW, Suite 608, Washington, DC 20036, telephone (202) 785-0017.

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and Electronic Engineers

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DEADLINES FOR THE IEEE BULLETIN

The final deadline for the next issue of the IEEE BULLETIN is to be at 12:00 noon on the last workday of the month, two months preceding the month of intended publication. This deadline applies to both editorial material and advertising. For camera ready advertising, a firm commitment to pay for the space of given dimensions must be received by the above deadline. If the advertiser so desires, the advertising copy may initially consist of dummy material such as the company's name. Then camera ready copy of the agreed upon dimensions may be substituted for the original material if received at the IEEE business office no later than 12:00 noon on the *seventh* (or nearest workday) of the month immediately preceding publication. Articles and meeting notices should be submitted typed with the calendar section on a separate sheet.

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Oktoberfest

ALPINE VILLAGE IEEE OKTOBERFEST MEETING

An unusual IEEE meeting will take place Friday, October 21, 1983, when the IEEE South Bay Harbor Section sponsors its October meeting at the Beergarden area of Alpine Village. This will be a joint meeting with South Bay Chapter 30 of the California Society of Professional Engineers (CSPE).

Alpine Village is located at 833 West Torrance Blvd., at the Torrance offramp of the Harbor Freeway. The Beergarden area is adjacent to all the restaurants and shops of Alpine Village. Excellent dinners are available at very reasonable prices. The starting time will be 7:00 p.m.

Because the Beergarden area has an admission charge of $3.50 (other areas of Alpine Village are open for shops and restaurants), arrangements must be made in advance. A limited number of half-price tickets are available. If your check for $1.75 is received by October 13, arrangements will be made for discount tickets. Checks should be made out to IEEE South Bay Harbor Section.

The history of the famed Oktoberfest began with a Royal Bavarian Wedding in 1810. To celebrate his autumn marriage, King Ludwig I called for a State Fair in Munich, the capital of Bavaria and now the third largest city in West Germany. The festival was dedicated to the fall harvest of beer, the region's most famous product.

Tradesmen and merchants came from throughout Germany to join in the merrymaking. They examined the crops, sang, danced, and sampled the first beer of the season. The celebration was such a success that King Ludwig issued a royal decree making every October in Munich festival time.

Oktoberfest has been held annually since and has grown so popular that Oktoberfest is even celebrated at Alpine Village in Torrance. The tradition of Oktoberfest at Alpine Village begins with the Mayor of Torrance opening the festivities by tapping an original wooden beer keg from Munich, Germany.

"Eichtal Baum", an Oom pa pah brass band direct from Stuttgart, Germany, will appear nightly, along with "Burggrumbrarher Kappelle." Included in the weekend program are dance groups in leather pants, Oktoberfest contests, pretzel eating, beer-mug carrying, wood sawing and yodelling.

Authentic German food and a variety of sausages—all made at Alpine Village by their own European chefs—are available. Light and dark beer on tap will keep flowing and many types of wines will be available at reasonable prices. Alpine Village plays host to over 24 European shops throughout the year.

For further information, contact Russell Gaspari at (213) 648-1325 or Peter Nilsen at (213) 641-8600. Mail your check payment of $1.75 to Russell Gaspari, 6656 W. 87th Place, Los Angeles, CA 90045.

TEST AND MEASUREMENT TUTORIALS

Readers of the Bulletin are reminded that there will be five parallel all-day tutorials on the Queen Mary, 16 January 1984, preceeding the IMTC and Measurement Sciences Conferences. The tutorials will be:

1. "Design for Testability", by Philip Jackson
2. "Solid-State Transducers" by Prof. Wen-H. Ko
3. "Field Testing Applications of ATE" by Fred Liguori
4. "Digital Waveform Analysis" by Bruce McKeever
5. "Testing Related to VLSI Design" by Rex Rice.

The advanced registration fee for IEEE members, before 2 December 1983, is $145, including complimentary lunch. For more information, please call or write: Myron Kayton, Tutorial Chairman, Kayton Engineering Company, P.O. Box 802, Santa Monica, CA 90406, (213) 393-1819

LINEAMENT ANALYSIS OF LANDSAT IMAGERY

Walter R. Fillippone

Landsat imagery makes available single scenes of the earth's surface covering an area of over 12,500 square miles each. Many observers have noticed the presence of lineaments which appear to extend for hundreds of miles and may represent boundaries of geologic provinces or fault systems which are related to oil and gas production and mineral deposits. Several scenes in California and the US are shown with the interpretation of lineaments.

Walter R. Fillippone
Senior Research Associate
Union Oil Company of California

Walter R. Fillippone is a graduate of Marietta College, Marietta, Ohio, and has a master of science degree from Cal Tech in geophysics. He has been with Union Oil Company of California over twenty-eight years and has served as assistant chief geophysicist in operations, exploration manager of the Glacier Division, and senior research associate in exploration. He has been inovlved in remote sensing for the past ten years. He has been the Vice President of the Society of Exploration Geophysicists. He is also one of the pioneers in Synthetic Seismogram technology.

Note: See Calendar Section: Geoscience and Remote Sensing: Monday, October 17, 1983.

METRO SECTION 1982-83 HIGHLIGHS

The Teller's committee has reported the results of the ballot count for the election of the Los Angeles Metropolitan Section executive officers. The newly elected members are:

Chairperson
Eremita Miranda
Vice Chairman
David W. Morrow
Secretary
Garry F. Garrigue
Treasurer
Donald Giddings
Professional Activities
Intree Suphamark

During the '82-83 year the Metro Section completed and approved guidelines on both the Selection for Company of the Year and Past Board Member Awards.

The Section participated in the arrangements and publicity for Wescon in Anaheim. A Section history committee was created to help IEEE celebrate its centennial year.

The Section provided input to an IEEE position paper on the issues of technology transfer and on the "shortage of engineers." The general membership meeting luncheon speakers made presentations on diverse topics. This section continues to acknowledge the variety of interest of its membership and the luncheon speakers were:

Mr. A. Arenal of Southern California Edison (SCE) spoke on "New Directions for SCE Engineering and Construction." Mr. Gary Strickler of SCE spoke on "Demand Subscription Service, A New Concept in Load Management." Mr. Sanford C. Jones of JPL presented the "Galileo Project—The Mission to Jupiter." Mark Gardner, WED Enterprises, spoke on "EPCOT, the Community of the Future." Dr. K. W. Chase of Brigham Young University presented "The Coming Revolution in CAD/CAM." With the last subject, members had a glimpse of an engineering environment of the future.

The goal of the Metro Section is to identify and satisfy the technical and professional needs of its members. Everyone is encouraged to refer to the IEEE bulletin for Section meetings.

Those interested in participating on Board activities are invited to call Chairperson, Eremita Miranda at (213) 572-3059

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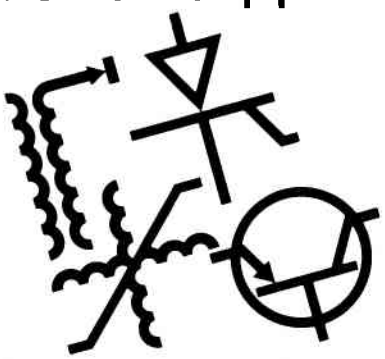

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POWER ELECTRONICS

This is an eight-week course organized by the South Bay Harbor Education Committee. It consists of one two-hour session per week from 6:00 to 8:00 P.M., starting Tuesday, October 11 at El Camino College.

The lecture series has been structured for the engineer, scientist and technical manager covering the components and technology of power processing. Lecture materials will include solid state power semi-conductors, diodes and SCR's; magnetic materials and control techniques; single and multiphase AC and DC systems tradeoffs; advanced energy power sources—MHD, fuel cells, solar cells; high temperature batteries; and several lectures on power processing, e.g., AC to DC, DC to DC, DC to AC, inverters, converters, variable speed drives, stability and loop compensation.

The course lecturer will be Mr. Baruch Berman, P.E., who has 30 years experience in the field of power electronics with many published papers and patents to his credit. He is a Fellow of IEEE, a Fellow of IAE and a registered Professional Engineer.

Pre-registration by October 1, 1983 is required. Please use the form below, enclosing the required fee ($125 IEEE, $150 non-IEEE). Check should be made to IEEE—South Bay Harbor Section. For further information regarding content, room or location call Mr. Berman at work (213) 594-2945 or Mr. Raul D. Rey, Section Chairman, at work (213) 535-5336.

REGISTRATION FORM — POWER ELECTRONICS COURSE
PLEASE PRINT ALL INFORMATION — PLEASE ENCLOSE PAYMENT

FEE: IEEE MEMBER $125.00 ☐ FEE: NON-MEMBER $150.00 ☐

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Senior Communications Programmer	To $40,000
Software Product Assurance	To $45,000
CPU Systems Designer	To $41,000
Graphics Microcoder	To $40,000
CAD/CAM Engineer	To $39,000
Intel 8086 Image Processing	To $46,000
Local Networks Designer	To $40,000
Electronics Packaging Engineer	To $30,000
Microelectronic Connector Engineer	To $35,000

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Quality Assurance Manager	To $35,000
CPU Section Manager	To $55,000
Manufacturing/Process Manager	To $40,000
Operations/MRP Manager	To $40,000

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IEEE MEETINGS CALENDAR

ACOUSTICS, SPEECH AND SIGNAL PROCESSING (S-1)

Reservation & Information: Douglas F. Elliott (714) 632-2340

AEROSPACE AND ELECTRONIC SYSTEMS (S-10)

Reservations & Information: William P. Hartmann (213) 615-8432

ANTENNAS AND PROPAGATION (S-03)

Reservations & Information: Mary Ryken (213) 709-0368

BUENAVENTURA SECTION (512)

Reservations & Information: S.K. Leong (805) 498-8832

CHINA LAKE SECTION (513)

Reservations & Information: Bob Williams (619) 939-6488

Thursday Oct. 13

Joint Meeting—ORANGE COUNTY SECTION & ORANGE COUNTY ED/CAS CHAPTER

Topic: Gallium Arsenide Pilot Line for Radiation Hard Low Power Systems
Speaker: Mr. Sven Roosild, Program Manager, DARPA, Washington D.C.
Time: 6:00 p.m. Cocktails; 7:00 p.m. Dinner; 8:00 p.m. Lecture
Location: Trabuco Room, Saddleback Inn
1660 East First Street, Santa Ana, CA

Reservations & Information: Alan Lee (714) 863-0102
Send checks for dinner ($9.50) to: IEEE ED/CAS, Alan Lee, 69 Highland View, Irvine, CA 92715, by October 7, 1983.
For more information contact: Gertrud Katz (213) 812-1460 or Ranjeet Pancholy (714) 632-1890

COMMUNICATIONS (S-19)

Reservations & Information: W. Larry Bacon (213) 573-5663

COMPONENTS, HYBRIDS AND MANUFACTURING TECHNOLOGY (S-21)

Reservations & Information: Paul Sadler (213) 822-8229 or
John F. Perkins (213) 357-6083

Thursday Oct. 27

Combined Meeting—COMPUTER-16.1 and RELIABILITY-07

Topic: Computer Standards
Speaker: Dr. Herbert Hecht, President, Sohar, Inc.
Time: 6:30 Dinner; 7:30 Presentation
Location: Hacienda Hotel, Sepulveda Blvd., El Segundo
(south of Imperial Blvd.)

Reservations & Information: Send check for dinner ($11.50) to: IEEE Computer Society, P.O. Box 1285, Pacific Palisades, CA 90272
or call Sam Lehr (213) 535-2905 by Oct. 23

Dec. 1,2 & 3

COMPUTER AND RELIABILITY SOCIETY (S—07/S-16.1)

Topic: Hardware/Software Reliabilty
Speaker: Gene Barnett, TRW, System Engrg./Irv Doshay, TRW & Lecturer at Univ. Calif. courses/Annette Frimzis, Consultant, formerly TRW/ Sam Lehr, TRW, Product Assurance/Myron Lipow, TRW, Lecturer at Univ. Calif. Course & Text Author
Location: TRW Training Facility, El Segundo, CA
Reservations & Information: Sam Lehr (213) 535-5603
Myron Lipow (213) 536-2001

COMPUTER, ORANGE COUNTY (S-16.2)

Reservations & Information: Demetris Michalopoulos (714) 524-0294
Alex Williman (714) 632-8111

CONTROL SYSTEMS (S-23)

Reservations & Information: W. Larry Bacon (213) 573-5663

ELECTROMAGNETIC COMPATIBILITY, LOS ANGELES (S-27)

Reservations & Information: Fred J. Nichols (213) 870-9383

ELECTROMAGNETIC COMPATIBILITY, ORANGE COUNTY (S-27)

Reservations & Information: Ed Nakauchi (714) 730-2577

ENGINEERING IN MEDICINE AND BIOLOGY (S-18)

Reservations & Information: W. Larry Bacon (213) 573-5663

ENGINEERING MANAGEMENT (S-14), EDUCATION (S-25), & PROFESSIONAL COMMUNICATION (S-26)

Reservations & Information: Samuel Lehr (213) 535-2905

FOOTHILL SECTION (514)

Reservations & Information: Robert V. Armstrong (714) 624-5911

Monday October 17

GEOSCIENCE & REMOTE SENSING, L.A. COUNCIL

Topic: Lineament Analysis of Landsat Imagery
Speaker: Walter R. Filippone
Time: 6:30 p.m.
Location: Griswold Hotel
1500 S. Raymond Ave.
Fullerton, CA
(at 91 Freeway)

Reservations & Information: Dr. Fred Aminzadeh (714) 528-7201 Ext. 2494

Wednesday Oct. 19

INDUSTRY APPLICATION IA-34

Topic: Three Phase Short-Circuit Approximations
Speaker: Dick Phillabaum, General Electric System Engineer
Time: 5:30 p.m. Social hour; 6:30 p.m. Dinner; 7:30 p.m. Meeting
Location: Taix Restaurant
Reservations & Information: Gail Bartholomew (213) 796-9141 x118

Wednesday Oct. 26

INFORMATION THEORY GROUP IT-12

Topic: Throughput/Delay Performance of Multi-hop Packet Radio Networks
Speaker: Professor John A. Silvester
Univ. of Southern California
Time: Cocktail hour at 6:30 p.m., optional dinner at 7:00 p.m. The dinner cost is $10 including beverage, tax and tip.
Location: Hacienda Hotel Dining Room. Located at 525 North Sepulveda Blvd. El Segundo (one mile south of LAX)

Reservations & Information: Professor Victor Li, USC (213) 743-5543
Tom Carter, TRW (213) 535-7676

Wednesday Oct. 19

INSTRUMENTATION AND MEASUREMENT IM-09

Topic: To be announced
Speaker: To be announced
Time: PLEASE CALL INFORMATION NAMES
Reservations & Information: John Lewis (714)736-5227
Frank Koide (714) 632-3923

Wednesday Oct. 19

S-33 MAGNETICS SOCIETY, LOS ANGELES CHAPT.

Topic: Magnetometer Design and Use
Speaker: Staff, Magnetic Design Consultants, Los Angeles, CA
Time: 8:00 p.m.
Location: #14 Steele Hall, Bldg. 61, California Institute of Technology, Chester St., Pasadena. Park south on Chester from Del Mar. No reservation for meeting.

Reservations & Information: Dinner: 6:00 p.m., One West Restaurant, 1 West California St., Pasadena (corner of Fair Oaks & California). Menu prices from $6.95 plus tax & tip.
Dinner reservations: by noon Tuesday, Oct. 18
Philip Massie (213) 839-6498 or Art Grinnell (213) 988-2600 x6949

Wednesday Oct. 26

METROPOLITAN SECTION

Topic: The Robotic Revolution
Speaker: Mr. Frank Cruz
KNBC's "News 4 LA" Anchorman
Time: Presentation starts at 12:00 noon
Location: Southern California Edison, Bldg. Headquarters, 2244 Walnut Grove Ave., Rosemead, CA 91770

Reservations & Information: Doretta Moreno (213) 572-4113
Nora Higgason (213) 921-4069

MICROWAVE THEORY & TECHNIQUES (S-17)

Reservations & Information: Francisco J. Bernues (213) 517-6371

Tuesday Oct. 18

NUCLEAR AND PLASMA SCIENCES - 05

Topic: Civil Defense—The Survival Imperative: Survival and recovery from a thermonuclear war
Speaker: Nancy Deale Greene, member of Board of Directors, American Civil Defense Association
Time: 6:00 p.m. Social hour; 7:00 p.m. Dinner; 8:00 p.m. Presentation

Location: Holiday Inn, LAX, 9901 La Cienega Blvd., Los Angeles
Reservations & Information: Mr. Ev King (213) 418-5266 or Mr. Stan Stewart (213) 418-6447

OCEANIC ENGINEERING (S-22)

Reservations & Information: W. Larry Bacon (213) 573-5663

Thursday Oct. 13

JOINT MEETING—ORANGE COUNTY ED/CAS CHAPTER & ORANGE COUNTY SECTION

Topic: Gallium Arsenide Pilot Line for Radiation Hard Low Power Systems
Speaker: Mr. Sven Roosild, Program Manager, DARPA, Washington D.C.
Time: 6:00 p.m. Cocktails; 7:00 p.m. Dinner; 8:00 p.m. Lecture
Location: Trabuco Room, Saddleback Inn
1660 East First Street, Santa Ana, CA

Reservations & Information: Alan Lee (714) 863-0102
Send checks for dinner ($9.50) to: IEEE ED/CAS, Alan Lee, 69 Highland View, Irvine, CA 92715, by October 7, 1983.
For more information contact: Gertrud Katz (213) 812-1460 or Ranjeet Pancholy (714) 632-1890

Saturday Oct. 29

ORANGE COUNTY SECTION

Topic: Installation Dinner
Time: 8:00 p.m. Dinner; 10:00 p.m. Boat cruise & drawing for door prizes
Location: Tale of the Whale Restaurant
400 Main St., Balboa, CA

Reservations & Information: Jai Haku - work: (714) 632-4445, home: (714) 998-8097
Contact by Fri., Oct. 22 for reservations. Cost: $16.00 per person.

Tuesdays & Thursdays through Oct.

POWER ENGINEERING S-31

Topic: 1) Design & Application of Protective Relays Including Operation & Maintenance Simulation. 2) Protection of Generation, Transmission & Distribution Facilities
Speaker: Instructors: Mr. Henry Grewal, Mr. Robert Klein, Mr. Susumu Sagara, & Mr. Nick Kezman
Time: 5:30 p.m. to 8:30 p.m.
Location: LA Dept. of Water & Power, System Protection Training Center, Room 308, Bldg. 7, 1630 N. Main St., Los Angeles

Reservations & Information: Mr. Morris Spizman (213) 481-6047

JOINT-POWER ENGINEERING (S-31) & INDUSTRY APPLICATIONS (S-34), ORANGE COUNTY

Reservations & Information: Dr. Khalil N. Zadeh (714) 838-0511

QUANTUM ELECTRONICS & APPLICATIONS (S-36)

Reservations & Information: William H. Steier (213) 743-2578

Thursday October 27

S16/S07 COMPUTER & RELIABILITY

Topic: Computer Standards
Speaker: Dr. Herbert Hecht, Pres. SoHar Inc.
Time: Dinner, 6:30 p.m.; Presentation, 7:30 p.m.
Location: Hacienda Hotel
Sepulveda Blvd. in El Segundo
(South of Imperial Blvd.)

Reservations & Information: Send check for dinner ($11.50) to: IEEE Computer Society
P.O. Box 1285
Pacific Palisades, CA 90272
Or call Sam Lehr (213) 535-2905 by October 23.

Dec. 1,2 & 3

RELIABILITY AND COMPUTER SOCIETY (S16.1/S07)

Topic: Hardware/Software Reliability
Speaker: Gene Barnett, TRW, System Engrg./Irv Doshay, TRW & Lecturer at Univ. Calif. courses/Annette Frimzis, Consultant, formerly TRW Sam Lehr, TRW, Product Assurance/Myron Lipow, TRW, Lecturer at Univ. Calif. Course & Text Author
Location: TRW Training Facility, El Segundo, CA
Reservations & Information: Sam Lehr (213) 535-5603
Myron Lipow (213) 536-2001

SAN FERNANDO VALLEY SECTION (517)

Reservations & Information: Robert Y. Wong (213) 885-3883

SAN GABRIEL VALLEY SECTION (518)

Reservations & Information: Robert V. Langmuir (213) 356-4845

Thursday Oct. 20

SANTA MONICA BAY SECTION (520)

Topic: ASK: A Computer Communications Breakthrough
Speakers: Drs. Frederick and Bozena Thompson
Time: 7:30 p.m.
Location: Loyola Marymount, Pereira Room 22
Reservations & Information: Gary Evans or Pauline Phaneuf (213) 535-2500

SOCIAL IMPLICATIONS OF TECHNOLOGY (S-30)

Reservations & Information: Pending — Chapter not yet formed

SONICS AND ULTRASONICS (S-20)

Reservations & Information: Chen Tsai (714) 833-5144

Friday Oct. 21

SOUTH BAY HARBOR SECTION (6-1-51)

Topic: Oktoberfest
Speaker: Eichtal Baum Oom-Pa-Pah Brass Band
Time: 7:00 p.m.
Location: Alpine Village
Harbor Freeway & Torrance Blvd., Torrance, CA

Reservations & Information: Russell Gaspari (213) 648-1325
Peter Nilsen (213) 641-8600

SYSTEMS, MAN AND CYBERNETICS (S-28)

Reservations & Information: W. Larry Bacon (213) 573-5663

VEHICULAR TECHNOLOGY (S-06)

Reservations & Information: Gary Gray (714) 834-2123

THE ROBOT REVOLUTION

How Will it Impact Us?

The Metropolitan Los Angeles Section is pleased to announce that Mr. Frank Cruz, KNBC's anchorman, will be the speaker at their October 26 meeting.

Mr. Cruz will discuss Robotics in the United States and other countries. He will also show a half hour movie that he produced on this subject. His presentation focuses on the impact robots are having and are expected to have on workers in this country and abroad.

He will include a discussion on Robotics in Japan; what are the Japanese doing and why they are so far ahead of us in the robotic revolution.

Frank Cruz is anchorman of the weekend editions of KNBC's News 4 LA. In addition, he serves as a general assignment reporter, filing news stories on the 4, 5, 6 and 11 p.m. weekday editions of News 4 LA. He has also filled in as vacation relief co-anchor of various Channel 4 newscasts and, most recently, he reported the five-part series and special documentary "The Latinization of Los Angeles" in the fall of 1982.

Frank Cruz

Prior to joining KNBC, he was a reporter for KABC-TV, and had an extensive career in education before entering the television industry. He was chairman of Mexican-American Studies for both Sonoma State College and Cal State University at Long Beach. He also served in the United States Air Force for 6 years and was stationed in the Philippines, Taiwan, and Japan, in

Continued on Page 29

GaAs PILOT LINE FOR RADIATION HARD LOW POWER SYSTEMS

DARPA's recent initiative to develop Pilot line production capability for GaAs circuits such as memories, gate arrays, and logic chips will be the subject of Mr. Sven Roosild's talk on October 13, 1983 at the joint meeting of the Orange County ED/CAS Chapter and the Orange County Section at the Saddleback Inn in Santa Ana. Mr. Roosild is the Program Manager for the GaAs Project at the Defense Advanced Research Project Agency, Washington, DC, and has contributed significantly to the technology development tasks in the past several years.

GaAs technology, supported by the various Government-sponsored research programs, has advanced to the point where impressive performance results have been obtained with circuits fabricated under research conditions. The highest complexity logic circuit, an 8 by 8 multiplier, and two different 256 bit SRAM's developed on DARPA programs have remained fully functional after exposure to $5x10^7$ rads (Si). Similarly, GaAs logic ICs have not upset when hit with transient radiation pulses up to $5x10^{10}$ rads (Si)/sec, and memory chips have retained information at even higher dose rates. Most significant is the fact that GaAs circuits possess this high degree of radiation tolerance while operating at relatively low power levels—a combination vital to space based systems. However, the DoD systems designers have not considered the use of GaAs circuits in system applications so far because such chips are not available to them at the complexity levels required by overall system reliability constraints. Complex chips, at the 1000 gate level or above, cannot be produced at an economical yield in the present GaAs fabrication facilities because of the low throughput, R&D mode in which they operate. Recognizing, that while the commercial advantages of GaAs based circuits may still be a subject of controversy, the DoD's needs in space surveillance for the GaAs technology are clear, DARPA/DSO has initiated a major GaAs program. The primary purpose of the program is to establish the rigorous process control that has made silicon VLSI possible for the production of GaAs integrated circuits. This desire is the impetus behind the Low Power, Radiation Hard GaAs LSI Pilot Line program. At the same time, the technology base support for GaAs has beeb increased so as to address additional problems in materials, processing, modeling, packaging, radiation effects and analog components. Mr. Sven Roosild's presentation will cover DARPA goals for the Pilot Line as well as provide a review of the technology base efforts.

Mr. Roosild has been Program Manager in the Defense Sciences Office of the Defense Advanced Research Projects Agency since 1980, where he is in charge of solid state electronic materials and device R&D programs. Recently, he initiated the DARPA Low Power Radiation Hard GaAs LSI Pilot Line program with the objective of providing the DoD systems design community with prototype GaAs memory and logic components.

The meeting will be held on Thursday, October 13, 1983 at the Saddleback Inn, 1660 East First Street, Santa Ana, CA. A cocktail hour will begin at 6:00 p.m. followed by dinner at 7:00 p.m. Mr. Roosild will speak at 8:00 p.m.

In order to obtain an accurate attendance count, reservations are requested by October 7, 1983 with payment of dinner cost. The cost of the dinner is $9.50. There is no charge for attending the presentation only.

For reservations, call Alan Lee at (714) 863-0102 (work) or (714) 752-8336 (home). Please make checks for dinner payable to IEEE ED/CAS. Checks should be mailed to Alan Lee, 69 Highland View, Irvine, CA 92715.

For any further information regarding the meeting, please call Gertrud Katz, Publicity Chairman, (213) 812-1460, Ranjeet Pancholy, Technical Program Chairman, (714) 632-1890, or Quent Cassen, Chairman, (213) 648-5547.

T-E A

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Instructor: Dr. J. V. Candy

Dr. Candy is Signal Processing and Control Thrust Area Leader and Project Engineer at the Lawrence Livermore National Laboratory, and an adjunct professor at the University of Santa Clara.

December 6,7,8 1983 — Rickey's Hyatt Hotel, Palo Alto, CA

For Course Description, Reservation, or General Information — CALL (408) 625-2016 WRITE Tech-Ed Assoc., P.O. Box 2365, Monterey, CA 93942

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Wescon/83

Executive Day Program Tuesday, November 8

Donald E. Procknow to Deliver Keynote Address

Donald E. Procknow, President of Western Electric Company, is scheduled to give the Keynote Address at a luncheon following the Marketing Conference on Tuesday, November 8, at noon.

Procknow is expected to address how the January 1 divestiture of the Bell Telephone companies from AT&T will affect the electronics marketplace. The title for Mr. Procknow's address is "The Electronics Market in the Information Age: a Western View." This Keynote Luncheon will be held in the Grand Ballroom of the Sheraton Palace Hotel.

This event will be attended by electronics and high technology executives in management, engineering, procurement, manufacturing, marketing and finance.

Donald E. Procknow
President, Western Electric Co.
Wescon/83 Keynote Speaker

Capital Financing Symposium Features Six Guest Speakers

The Capital Financing Symposium, like the Marketing Conference, is jointly sponsored by the Electronics Association of California and Wescon. This symposium, which is designed to inform growth-oriented electronics firms about their various financing alternatives, will be held on Tuesday, November 8 from 2:00 to 5:00 PM in the Gold Ballroom of the Sheraton Palace Hotel.

The speakers are Gene Horwitz, CPA and Manager of Capital Financing at Singer, Lewak, Greenbaum & Golstein; J. Richard Tucker, Esq., President of University Securities Corporation. Messrs. Horwitz and Tucker will address "Formulating and Demonstrating Financial Needs." David A. Evershoff, Esq., Partner of Hill, Farrer and Burrill, will discuss "Legal Aspects and Protecting your Company and Investors." Allen W. Sanborn, Senior Vice President for California Corporation Banking Activities at Bank of America, will address the topic, "When is Debt-Financing the Right Alternative?"

Thomas S. Volpe, Senior Vice President, Member of the Board and Management Committee, and Managing Director of the firm's Corporate Finance Department at Hambrecht & Quist, Inc.; and A. Robert Towbin, a partner with L.F. Rothschild, Unterberg and Towbin; will discuss "How Private and Public Equity Helps Companies Grow."

Marketing Conference to Explore Future of Electronics

The Electronics Association of California and Wescon will jointly sponsor this first Executive Day event, in the Gold Ballroom of the Sheraton Palace Hotel. There will be a continental breakfast starting at 8:00 AM followed by the conference, which is slated to begin at 9:00 AM.

The theme of the Marketing Conference will be "The Emerging Markets and New Opportunities in Electronics 1983 to 1988." Five authorities from the industry will explain the changes that they foresee taking place in the next five years in the areas of product innovations and new selling methods. They will also examine the major forces that are dictating competition.

The program will begin with Jerry Wasserman, Senior Consultant with Arthur D. Little, Inc., who will discuss the outlook for the electronics industry from 1983 to 1988. Next, Thomas Hinkelman, Executive Director of the Semiconductor Industry Association, will cover the growth trends and market applications in the semiconductor industry during the next five years. Following his presentation will be Janice Carnes, Marketing Manager, Office Systems Division of Rolm Corporation, who will highlight the opportunities of a merger of telecommunications and data communications systems and its effect on tomorrow's business. The fourth speaker will be Harold P. Novick of Novick and Associates, who will delve into new marketing techniques for selling in the 80's. Concluding the Marketing Conference will be Egils Milbergs, Director of the Office of Productivity Technology and Innovation at the U.S. Department of Commerce. He will discuss the major forces affecting high-technology industries.

Registration for Executive Day Program Events

The registration fee for the Marketing Conference is $50 including the Keynote Luncheon. The fee for the Capital Financing Symposium is $50, which also includes the Keynote Luncheon. Registration for the Keynote Event only is $20, and enrollment in the entire Executive Day Program is $75.

IECON'83 During Wescon Week

IECON'83 is the Ninth Annual International Conference in Industrial Electronics, Control and Instrumentation, with continuing emphasis on industrial applications of mini- and microcomputers. It will be held at the Hyatt Regency Hotel in San Francisco, November 7-11, 1983.

The following tutorials, special sessions and workshops are being developed for IECON'83:

November 7 – 9:00 AM – 5:00 PM
- Microprocessors in Control and Instrumentation
- Software Engineering Management

November 8 – 9:00 AM – 11:30 AM
- Automated Manufacturing
- Data Acquisition
- Motor Control I
- Machine Vision

November 8 – 2:00 PM – 4:30 PM
- Automated Testing
- Sensors and Instrumentation
- Motor Control II
- Software Reliability

November 9 – 8:30 AM – 9:45 AM
- Local Area Networks and Factory Communication

November 9 – 10:00 AM – 11:15 AM
- VLSI Impact on Industrial Electronics

November 9 – 2:00 PM – 3:15 PM
- Robotics – Today and Tomorrow

November 9 – 3:30 PM – 4:45 PM
- Quality in Industrial Electronics: Is It Really Free?
- Trends in Motion Control

November 10 – 9:00 AM – 11:30 AM
- Programmable Control
- Power Systems
- Software Techniques
- Robotics

November 10 – 2:00 PM – 4:30 PM
- Numerical Control
- Computer Control
- Local Area Networks
- Manufacturing Workcell Architecture

November 11 – 9:00 AM – 5:00 PM
- Fault Tolerant Computers in Industrial Applications
- Modern Digital Systems Design
- Local Area Networks

Additionally, the Industrial Electronics Society will be presenting their Annual Awards Luncheon on Wednesday, November 9.

For registration information, contact Mr. Frank Jur, Bechtel Corp., 45 Fremont St., MS 45/17A26, San Francisco, CA 94119; Telephone 415/882-1961.

Spouses' Tour and Hospitality

On Wednesday, November 9, Wescon spouses will have the opportunity to see the sights of San Francisco on a tour entitled "The Essence of the Area." This sightseeing trip will depart from the Westin St. Francis Hotel at 9:00 AM and return at 4:30 PM.

The price of this tour, which includes lunch at the Corinthian Yacht Club, is $25.00.

The Victorian Room in the Westin St. Francis will be the site of the Wescon Spouses' Hospitality Suite. Hours of the suite are 8:00 AM - 2:30 PM on Tuesday, November 8; 8:00 AM - 4:00 PM on Wednesday, November 9; and 8:00 AM - 4:00 PM on Thursday, November 10.

A welcoming reception will be held Tuesday, November 8 from 2:30 to 4:00 PM in the Oxford Room at the Westin St. Francis.

Educational Conference

Women in Electronics and the Society of Women Engineers will sponsor a conference, "Today's Education – Tomorrow's Competitive Edge," November 10, beginning at 1:30 PM in the Moscone Center in Room 250-262. The program, to be moderated by Ms. Carolyn Morris, President of Xpertek, will feature a panel of well-known experts in industry, education and government. Finding quality employees for both professional and non-professional positions is a challenge for today's executives and managers. If you're not satisfied with the new employees you're hiring, this session will present ideas for turning the situation around by improving our educational system at all levels.

Preregistration is necessary to assure admission. The $10.00 fee covers the conference, a wine and cheese tasting following the conference, and registration for Wescon.

Technology Forecasting Workshop

This expanded, updated workshop will orient attendees to the concept of TF as a management tool. Planned as an interactive training session, the workshop is aimed at the engineer/manager and planner to assist him/her in improving the planning of research programs, analyzing major technical threats and opportunities, establishing realistic R&D performance goals, and determining appropriate timing for the introduction of new products, processes or materials. Attention will be directed toward initiating a technology forecasting program and how it may be integrated with an existing operations procedure.

The instructors will be Dr. John H. Vanston, Jr., President, Technology Futures, Inc. (TFI), Austin, Texas; Mr. Ralph C. Lenz, Senior Research Scientist, University of Dayton (Ohio); and Ms. Donna C. L. Prestwood, Director of Programs for TFI.

The course will take place over two and one-half days: Sunday, November 6 and Monday, November 7 from 8:30 AM to 4:30 PM (with lunch from 12:00 - 1:00 PM); and Tuesday, November 8 from 8:30 AM to 12:00 Noon. It will be held in Moscone Center Rooms 252-254.

The fee for this course is $425, which includes lunch the first two days, all coffee breaks, training materials and texts, and registration for Wescon/83.

IEEE Life Members Program Planned

IEEE Life Members will hear Emmet Cameron speak about the "History of Electronics in Northern California," at their annual luncheon. Cameron will describe the key events responsible for the establishment of hundreds of innovative and successful companies in this region.

Emmet Cameron retired several years ago from Varian Associates of Palo Alto after twenty-five years as an officer and director. He is a senior life member of the IEEE and a founding director of ECI, the producer of Wescon, Electro and other IEEE/ERA conventions. He is a past president of WEMA, now the American Electronics Association, and a past president of the Palo Alto Chamber of Commerce.

This program, for IEEE Life Members, will be held on Thursday, November 10, from Noon to 2:30 PM in Rooms 252-260 at Moscone Convention Center. Admission is $2.50 each for Life Members and their spouses, and $12 for all others.

Wescon/83

Wescon, the nation's leading high technology electronics convention and exhibition, is prepared for the largest and most comprehensive show in its thirty-two-year history.

More than 900 manufacturers and suppliers of electronic and electronics-related products will occupy all of the available exhibit space at the new Moscone Convention Center, as well as Brooks Hall and Civic Auditorium.

Wescon/83 has been expanded to four days — November 8 - 11, 1983 — which will reduce crowd density and give the expected 75,000 visitors an opportunity to see more exhibits, attend more Professional Program sessions and visit Mini/Micro West-83.

Mini/Micro West is the region's only major computer conference and exhibition which specifically addresses the OEM marketplace. It is being held concurrently with, but separately from, Wescon. A reciprocal registration program will make it easy for Wescon visitors to attend both shows at no additional cost.

The Wescon shuttle bus system will provide transportation between show sites, major hotels and auxiliary parking facilities, as shown on the map on page 13 of this Bulletin.

Register in Advance; It's Faster, Easier — and Less Expensive

Register by mail — in advance — for Wescon because it's easier, faster and less expensive. It can even mean free admission.

Wescon/83 credentials will be honored at all show locations. Additionally, your Mini/Micro West credentials are good at Wescon at no extra charge.

There are four ways to register for Wescon/83, and three of them are easy:

- Contact a member of Wescon's Attendance Committee, at the many participating companies throughout California, for a complimentary registration card. Mail the completed card to arrive by October 14 to receive your credentials in the mail.
- Ask any Wescon exhibitor for a complimentary registration card. Complete and mail the card to arrive by October 14 to receive credentials by mail. Exhibitor cards will be accepted at the door without a fee.
- Complete and mail the special discount registration coupon, to arrive by October 14, with your check for $5. This will assure admission for half the at-the-door price.
- Finally, you can register at the door for $10.

NOTE: Registration cards received after October 14 will be processed and badges held at the "Advance Registration Will Call" desk at Moscone Center.

International Business Center and Visitor Reception

Foreign visitors will be welcomed in the International Business Center in Rooms 232-234 at Moscone Center. Here, visitors will be provided with complimentary registration services, translation services and show information. The International Business Center will be open every day during show hours.

Foreign visitors, exhibitors, and attendees will have the opportunity to get acquainted and explore mutual interests at the International Visitors' Reception. This informal gathering will be held on Wednesday, November 9 from 5:00-7:00 PM in Rooms 250-262 in the Moscone Convention Center. Invitations to the International Visitors' Reception will be available at the IBC.

Purchasing Conference Focuses on Maximizing Effectiveness of Distribution

With the demands of a rebounding economy and a marketplace requiring on-time deliveries, top quality and competitive prices, the timing for this conference is perfect. A panel of five outstanding purchasing professionals will tackle the topic of "Making the Most of Distribution in Electronics Purchasing." This conference will be held on Wednesday, November 9 from 8:00 - 11:30 AM in Rooms 252-260 of the Moscone Convention Center.

This purchasing seminar is co-sponsored by the Purchasing Management Association of Northern California and the Purchasing Management Association of Silicon Valley. This seminar will present top professionals in the fields of electronics purchasing, distribution, and sales representation. The speakers include Wes Sagawa, Regional Director of the Northwest Region of Arrow Electronics; John Rabbitt, Senior Vice President of Powell Electronics' Western Division; Vic Mathews, Jr., C.P.M., Production and Inventory Control Manager of Branson IPC; Walt Buezynski, C.P.M., Materials Manager of Cadtrak Corp.; Robert C. McKenzie, Sales Manager of NovaTronix.

These five speakers will discuss such key issues as buyer-distributor relations in the age of shrinking vendor bases; how to manage distributor performance; maintaining competition while increasing reliance on select distributors, and designing and administering distributor supply contracts for the 1980s.

Registration for the Purchasing Conference is $10.

ERA and NEDA Sales Strategy Forum

The Electronic Representatives Association (ERA) and the National Electronic Distributors Association (NEDA) are jointly sponsoring a Sales Strategy Forum to assist company sales and marketing executives in finding new ways to get a better return from their marketing dollars. This forum is scheduled to begin with registration and a continental breakfast at 8:00 AM on Thursday, November 10 at the Moscone Convention Center, Rooms 250-262. Moderator Jack Berman will open the program.

Representing ERA will be Ray Hall, Executive Vice President. Mr. Hall will demonstrate how companies can effectively market their products by using independent manufacturers' representatives. He will also cover how to put together a nationwide network of these representatives with the help of ERA's "Lines Available" marketing program.

Executive Vice President of NEDA, Toby Mack, will discuss NEDA services and activities to assist manufacturers in planning and implementing a distributor program. Mack will also explain how to facilitate and automate the exchange of important marketing and administrative information.

Answering questions from the audience will be a panel consisting of Phil Spillane, Beckman Instruments; Josh Napua, Wyle Electronics; Jack Costa, Schweber Electronics; Jim Jordan, Moxon Electronics; Fred Webb, Potter & Brumfield Division/AMF; and Bruce Anderson, Sumer, Inc.

Registration for the forum is $10 and will include a packet of information including the ERA and NEDA membership directories and a suggested representative contract.

Export Marketing Symposium

In an effort to help electronics firms export their products and services, Wescon is presenting an Export Marketing Symposium. This international seminar will be in Room 256 of the Moscone Convention Center on Wednesday, November 9, from 2:00-5:00 PM.

How different size firms adopt a successful export marketing strategy will be discussed by five outstanding speakers. Some of the key issues that will be addressed are foreign market research; foreign advertising; appointment, supervision and development of foreign sales reps and distributors; use of export management firms, and selection and participation in foreign trade shows. Other topics of interest that will be covered are selecting foreign factory and office locations; using a "DISC"; moving freight and personnel; export licenses and controls, and where to find information about exporting.

There will be a $10 fee for this symposium which includes a printed handout of the bibliography.

Air Fare and Car Rental Discounts

In cooperation with American Airlines, Air Cal, American International Rent A Car and Hertz, INCENTIVE JOURNEYS will save your company money on air and car rental transportation when you travel to Wescon/83 and Mini/Micro West-83. Normally restricted air fares have been specially negotiated for attendees and exhibitors.

Unlimited car mileage rates with American International are from $24 a day for a sub-compact to $32 a day for a full sized four door. Low weekly rates are also available.

Unlimited mileage rates with Hertz are from $32 a day for a sub-compact to $40 a day for a full sized four door. Check for discounted weekly rates.

Reservations made by October 28 will be eligible for the drawing for two *free* tickets to any American Airlines city in the continental United States and Hawaii.

Call INCENTIVE JOURNEYS toll free at 800-423-2080; 213-997-0311; or 408-998-1613 for reservations, pre-assigned seat selection and boarding passes.

You may also call Air Cal's Wescon Desk at 800-222-5562 and American Airlines at 800-433-1790. Airline tickets will be issued by Incentive Journeys.

Park at Candlestick Use Free Shuttle

Parking at Candlestick Park is recommended to avoid traffic, limited downtown parking and higher parking rates. The Candlestick Park parking lot's hours of operation during Wescon will be 7:30 AM to 6:45 PM. Parking will be $2 for autos. *All automobiles must be removed by 6:45 PM.*

Extremely limited parking will be available at Moscone Convention Center, the Brooks Hall/Civic Auditorium complex, and at the nearby public lots.

Wescon shuttles will be available to transport attendees and exhibitors to and from the convention sites. Following is a schedule for Tuesday, November 8 through Friday, November 11—

Route 1: Covers Candlestick Park, Moscone Convention Center, and the Brooks Hall/Civic Auditorium complex.

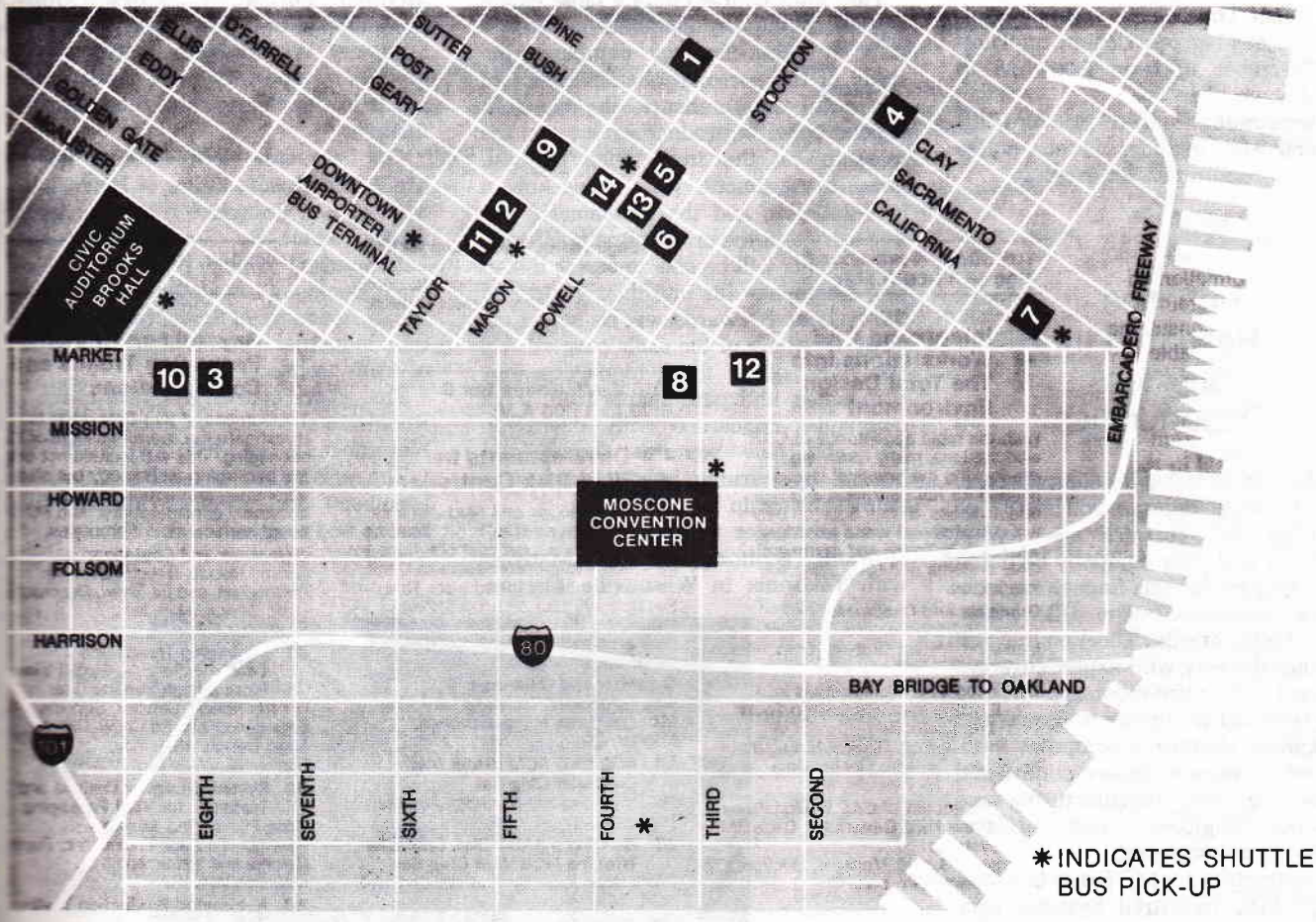
Route 2: Includes the Southern Pacific Depot (4th St. and Townsend) and Moscone Center.

Route 3: Connects the Hilton Hotel to the Westin St. Francis Hotel, the downtown Airporter Bus Terminal, and Moscone Center.

Route 4: Covers the Hyatt Regency Hotel and Moscone Center.

Route 5: Connects Moscone Center and the Brooks/Civic complex.

Two shuttle buses will operate for exhibitors on Monday, November 7, from 7:30 AM to 6:30 PM. Their route will include the Hilton and Westin St. Francis Hotels, Moscone Center, and the Brooks Hall/Civic Auditorium complex.



Hotels

1 Fairmont
2 Four Seasons Clift
3 Holiday Inn/Civic Center
4 Holiday Inn/Financial District
5 Holiday Inn/Union Square
6 Hyatt on Union Square
7 Hyatt Regency San Francisco
8 Meridien
9 Pacific Plaza
10 San Franciscan
11 San Francisco Hilton
12 Sheraton Palace
13 Sir Francis Drake
14 Westin St. Francis

Wescon Tutorials

The Manager's Perception of Reliability

This short course will offer attendees a review of reliability as a discipline which has strong ties to other functional activities including contractual requirements for reliability; reliability and quality assurance as individual disciplines; design review as a management tool; parts control and minimization of reliability degradation during production and test. This tutorial will demonstrate to management the importance of understanding and control of these functions to maximize cost effectiveness.

The course instructor will be Mr. Chuck Leake of Los Altos, a reliability consultant and formerly a Group Engineer/Instructor at the Sunnyvale, California Lockheed facility.

This short course will take place in Room 256 at Moscone Center, on Tuesday, November 8, from 9:00 AM to 3:30 PM.

The registration fee is $55 ($45 for IEEE Members) and includes lunch, coffee breaks and registration for Wescon.

Robotics - Research In Business Opportunities

If today can be called the computer age, the next several decades will surely be known as the "robotics age." What should you and your company be doing now to prepare for this impending technological revolution? The IEEE-videotaped robotics one-day short course will help point the way with expert coverage of current and future robot applications, and is intended for research, design and development engineers; computer hardware and software engineers; control and systems engineers; manufacturing and production engineers, and top-level engineering management.

The instructors are Mr. James S. Albus, Acting Chief, Industrial Systems Division; and Manager, Programmable Automation Section, National Bureau of Standards; Mr. Maurice J. Dunne, Vice-President Product Planning, Unimation, Inc.; Mr. Michael Radeke, Robot Division Manager, Cincinnati Milacron, Inc.; and Mr. Thomas B. Sheridan, Professor of Engineering and Applied Psychology and Head of Man/Machine Systems Laboratory, MIT.

This short course will take place in Room 250-262 at Moscone Center, on Tuesday, November 8, from 9:00 AM to 3:30 PM.

The registration fee is $75 ($65 for IEEE Members) and includes course notes, lunch, coffee breaks, and registration for Wescon.

Technical Entrepreneurship: Starting a High Technology Company

This short course offers a close examination of the key elements needed to start a high-technology company: the study of the personal characteristics of successful entrepreneurs, the close fit needed between product/service and the marketplace, the importance of cash flow management, the value of a business plan and the problems of getting started in the critical first two years. Participants will be able to assess if starting a company fits into their goals, and the risks and rewards will be stated objectively. Many of the skills covered will apply to other than high-technology companies, and participants from large companies concerned with diversification and new ventures should also benefit, by learning how to encourage entrepreneurship.

The instructor will be Dr. Edward G. Howard, Technology Planning Manager with Tektronix in Wilsonville, Oregon. He has been with Tektronix for six years, working in both engineering and marketing positions. Previously, Dr. Howard had worked for Lear Siegler in diversification and new product development, analyzing and managing the start-up of several successful new ventures.

This tutorial will take place in Room 252-254 at Moscone Center, on Friday, November 11, from 9:00 AM to 5:00 PM.

The registration fee is $90 ($80 for IEEE Members) and includes lunch, coffee breaks and registration for Wescon.

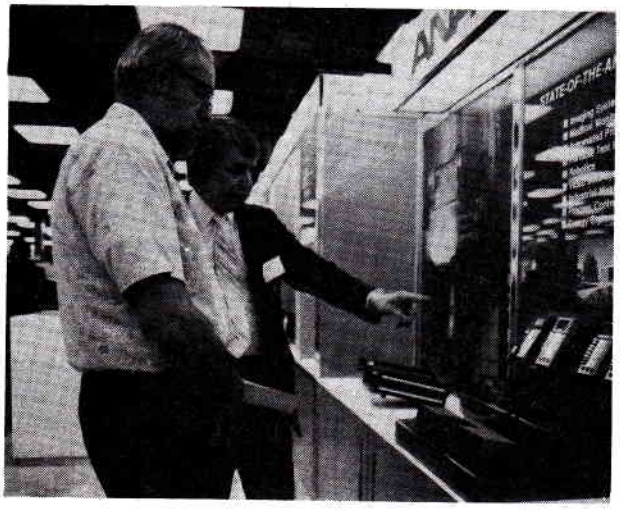
Strategies for Technical Report Writing

This tutorial will illustrate how you can write your report faster and better if you plan your communication strategy from the start. The course will show how to use strategies such as Audience Analysis, Modular Format, Inductive Outline, Communication Triad and Executive Summary. With these tools, it is possible to plan a report to meet management needs in the clearest and most effective manner.

The instructor for this course will be Mr. Bruce Finson, Editor of Intersci, lecturer at San Francisco State University, former editor for Stanford Electronic Laboratories, Philco Western Development, Beckman Instruments and the California Academy of Sciences. Mr. Finson is an industrial consultant and the author of many technical articles.

This short course will take place in Room 256 at Moscone Center, on Friday, November 11, from 9:00 AM to 4:00 PM.

The registration fee is $55 ($45 for IEEE Members) and includes lunch, coffee breaks and registration for Wescon.



Wescon/83

Professional Program

Important Note:
The following information on the Professional Program is subject to change. Consult the Official Program, available at the show.

All Professional Program Sessions will be held in the Meridien Hotel.

TUESDAY, November 8
9:00 to 11:00 A.M.

1 Integrating CAE Workstations Into The Total Design Environment

With the rapid acceptance of CAE workstations, many users are overlooking the practical issues needed for full utilization and effectiveness. In this Session users will describe real world experiences with both in-house and commercial CAE systems and total system integration.

Organizer and Chairman:
Gerard H. Langeler, Vice President, Marketing, Mentor Graphics Corporation, Portland, OR

1/1 Tying CAE Workstations Into Existing In-house Design Tools The Tradeoffs
William C. Jaques, General Manager, Application Systems, Control Data Corporation, Minneapolis, MN

1/2 The Impact of CAE Workstations on the Next Generation CAD/CAM Systems
Thomas J. Gubala, Manager, Electronic CAD, Boeing Aerospace Company, Seattle, WA

1/3 The Value and the Limits of CAE
David C. Drumheller, Unit Manager, Design Automation, RCA, Government Systems Division, Moorestown, NJ

1/4 It's Time for Computer Integrated Engineering
Gerard H. Langeler, Vice President, Mentor Graphics Corporation, Portland, OR

1/5 Engineering Workstation for VLSI Design
Mike F. Wiles, System Design Manager, Motorola, Inc., Microprocessor Division, Austin, TX

TUESDAY, November 8
9:00 to 11:00 A.M.

2 Developments In VLSI Disk Controllers

The use of floppy and hard disks as mass storage devices is proliferating at a rapid pace. Low cost solutions for interfacing microprocessors to these devices are being introduced. This Session will provide an overview of these new disk controllers, including their architectures, features, and sample applications.

Organizer and Chairman:
Alex Goldberger, Technical Marketing Manager, Excel Microelectronics, Milpitas, CA

2/1 ACS 5000 SCSI (SASI) Disk Controller Chip Set
Phil Devin, Product Manager, Adaptec, Milpitas, CA

2/2 Building a SASA Disk Controller With the NCR VLSI Chip Set
David Skinner, Senior Principal Engineer, NCR Corp., Wichita, KS

2/3 An Intelligent Hard and Floppy Disk Controller for the M68000 Family
Guy Thomsen, Supervising Engineer, Signetics Corporation, Sunnyvale, CA

2/4 LSI Controller for 5¼" Winchester Disk Drives
Harry Laswell, Product Manager, Intel Corporation, Santa Clara, CA

TUESDAY, November 8
9:00 to 11:00 A.M.

3 Beyond Forty Pins: Packaging Trends and Considerations

The purpose of this Session is to investigate the overall aspects of VLSI packaging. This will include not only the packaging technology but also automated production testing, assembly considerations, and PC board surface mount problems.

Organizers and Chairmen:
George Nelson, Director Systems Engineering, and Ed Chow, Director, Logic Design, Atari, Inc., Sunnyvale, CA

3/1 Packaging Trends and Considerations: A Global View From a High Volume User
George Nelson, Director, Systems Engineering, and Ed Chow, Director, Logic Design, Atari, Inc., Sunnyvale, CA

3/2 System Designer Options and Tradeoffs for VLSI Packaging
Doug Pecchenino, Manager, Assembly/Package Engineering, Fairchild Camera and Instrument, Mountain View, CA

3/3 Automated Production Testing Considerations for VLSI Circuits
Roger Williams, Director, Marketing, Delta Design Inc., San Diego, CA

3/4 High Density Packaging: A Semiconductor Manufacturer Viewpoint
Matt Penry, Section Head, Advanced Packaging Development, National Semiconductor, Santa Clara, CA

3/5 Manufacturing Trends for Automated VLSI Assembly
Dr. Stanley Wang, President, Pantronix Corp., San Jose, CA

TUESDAY, November 8
12:30 to 2:30 P.M.

4 Can Systems, PC Board and IC Design Engineers All Use Engineering Workstations?

This Session will cover engineering workstations from the engineer's perspective. What are they and how do they support systems, PC board and IC design? How do they make the engineer's job easier, more creative and productive? The audience will gain an understanding of the capabilities, use and benefits of engineering workstations.

Organizer and Chairman:
Don Laughlin, Product Marketing Manager, CAE Systems, Inc., Sunnyvale, CA

4/1 Defining the Problem and the Solution
Don Laughlin, Product Marketing Manager, CAE Systems, Inc., Sunnyvale, CA

4/2 Integrating IC Design Into a Systems Environment
Jim Tolar, Engineer-IC Design, Gould, Inc., Gould Laboratories, Rolling Meadows, IL

4/3 PC Board CAD Requirements
Joseph Sliwkowski, Vice President, Product Development & Planning, Telesis Systems Corporation, Chelmsford, MA

4/4 Designing ICs With An EWS
Les Holland, Principal Staff Engineer, Motorola Semiconductor, Mesa, AZ

4/5 Logic Simulation On An EWS
Peter Denyer, Product Manager, Comsat General Integrated Systems, Palo Alto, CA

TUESDAY, November 8
12:30 to 2:30 P.M.

5 New VLSI Solutions For Winchester Disk Control

This Session will cover recent developments in VLSI Hard Disk Controllers which promise to lower the overall cost of integrating Hard and Floppy disk drives into an ever-widening market. The benefits of VLSI provide improved performance for disk systems including such features as automatic error correction, DMA control and backup capabilities.

Organizer and Chairman:
Mort Herman, Manager of New Product Development, Standard Microsystems Corporation, Hauppauge, NY

5/1 A New VLSI Hard/Floppy Disk Controller
Rich Nesin and Tak-po Li, System Engineers, Standard Microsystems Corporation, Hauppauge, NY

5/2 An LSI Solution To The Hard Disk Controller: uPD7261
Henryk Szejnwald and Phillip L. Brooks, Application Engineers, NEC Electronics U.S.A. Inc.: Microcomputer Division, Natick, MA

5/3 LSI Control for SMD Drives
Joeseph J. Jaworski, Application Engineer, Western Digital, Irvine, CA

5/4 A High Performance Disk Data Controller
Mike Evans, Applications Manager, National Semiconductor Corp., Santa Clara, CA

TUESDAY, November 8
12:30 to 2:30 P.M.

6 Meeting the Packaging Requirements of Modern VLSI Designs — Cooling, Chip Carrier, Surface Attachment

Design engineers cannot hope to utilize VLSI Technology successfully unless the attendant issues of packaging and thermal management are confronted squarely. Speakers in this Session will address topics vital to using these new ICs with their extraordinary high numbers of active devices.

Session Organizer:
Stephen E. Grossman, President, Stephen E. Grossman, Inc., Los Altos, CA

Session Chairman:
James Donegan, General Manager, Cambion Division, Midland-Ross, Cambridge, MA

6/1 Thermoelectric Temperature Control - A Solid-State Technique for Cooling
Paul C. Hannon, Product Manager, Cambion Division, Midland-Ross, Cambridge, MA

6/2 Cost-Effective Utilization of Modern Multilayer Circuit Boards
Dave Haun, President, California Circuit Engineering, Inc., Sunnyvale, CA

6/3 Chip Carriers Fulfill High Performance and Cost-Effective VLSI Packaging Requirements
Robert Meehan, Product Manager, Amp, Inc., Harrisburg, PA

6/4 Surface Attachment of Custom and Standard LSI Devices - An Overview
Bill Robson, President, Array Technology, San Jose, CA

TUESDAY, November 8
3:30 to 5:30 P.M.

7 The Impact of Computer-Aided Design Tools on Custom IC Design - How Simple Can IC Design Become?

This Session will focus on various CAD/CAE Systems and the approach each takes on custom IC designs. Various applications and examples of IC design tools will be highlighted, with a focus on what the future will bring in CAD/CAE Tools.

Organizer and Chairman:
Robert T. Duyn, Product Marketing Manager, User Designed Tools, VLSI Technology, Incorporated, San Jose, CA

7/1 Daisy Gatemaster's and IC Design
Lucio Lanza, Marketing Manager, Daisy System, Sunnyvale, CA

7/2 IC Design With Cell Compilers
Robert Duyn, Product Marketing Manager, VLSI Technology, Inc., San Jose, CA

7/3 CALMA STICKS: A Semi-custom IC Design System
Ron Rohrer, Director Electronic Marketing, CALMA, Santa Clara, CA

7/4 CAD Tools for Systems Engineers (Application Example Covering 5 chips Telic Designed)
Patrick Scaglia, La Telephonie Industrielle et Comercialle (Telic), Cedex, France

TUESDAY, November 8
3:30 to 5:30 P.M.

8 Low Cost Networks And Their Impact on System Architecture

Microcontrollers that provide real time control capabilities are being used increasingly to realize distributed intelligence or modular systems. These microcontrollers must be connected together via a network link. This Session will explore two network control mechanisms: distributed and centralized control.

Organizer and Chairman:
Bob Dahlberg, Product Marketer, Intel Corp., Santa Clara, CA

8/1 **Realizing Serial Backplanes: Trade Offs Between Centralized and Distributed Network Control**
Steve Wilczek, Engineering Manager, Xerox Corporation, Rochester, NY

8/2 **A Low Cost Peripheral Interface for the Workstation Environment**
Donlan Jones, Manager, Data Communications & Networking Group, Tektronix Inc., Wilsonville, OR

8/3 **Low Cost Multiple Access Networks Realized by a High Performance Microcontroller**
Tony Bozzini, Marketing Manager, Signetics Corp., Sunnyvale, CA

8/4 **High Performance Microcontroller Provides Local Intelligence and Manages Interface to a Fast Serial Network**
Charles Yager, Applications Engineer, and Bob Dahlberg, Product Marketer, Intel Corporation, Santa Clara, CA

TUESDAY, November 8
3:30 to 5:30 P.M.

9 Electromagnetic Interference and Government Regulations- How To Cope

All equipment capable of interfering with radio or television transmission must be either in compliance with or certified by the Federal Communications Commission by October 1, 1983. This Session will summarize current regulations and present alternative methods of compliance with the regulations

Organizer and Chairman:
John J. Reilly, President, Electro-Kinetic Systems, Inc., Wilmington, DE

9/1 **FCC Regulation Update**
Tom Cokenias, EMC Consultant, Electro Service Corporation, San Mateo, CA

9/2 **Designing Business Machines for Optimal EMC Capability**
Grover Boothman, Senior R&D Project Manager, Qume, Incorporated, San Jose, CA

9/3 **EMI Shielding Techniques for Plastic Packages**
John L. Jackman, Director of Engineering, Electro-Kinetic Systems, Inc., Wilmington, DE

9/4 **The ABC's of Good Design for RFI Shielding**
John Wright, Lastomerics Ltd., Gardena, CA

WEDNESDAY, November 9
9:00 to 11:00 A.M.

10 CAD Technology Alternatives for Semi-Custom and Custom VLSI Design

CAD tools are a major force behind the rapidly increasing availability of semi-custom and custom VLSI to the system designer. A variety of architectural forms, software tools, levels of abstraction of interface, custom/vendor responsible division, etc., are becoming available. This Session will highlight the alternatives and their trade offs.

Organizer and Chairman:
Pradip Madan, Product Marketing Manager, LSI Logic Corporation, Milpitas, CA

10/1 **Engineering Workstations in Distributed Design Environments**
Steve Shapiro, Chief Scientist, CAE Systems, Sunnyvale, CA

10/2 **Engineering Workstations Expand In Range of Applications and Performance**
Mike Bosworth, Director of Marketing, Mentor Graphics, Portland, OR

10/3 **Logic Array CAD Alternatives for the System Designer**
Pradip Madan, Product Marketing Manager, LSI Logic Corporation, Milpitas, CA

10/4 **CAD Tools for Standard-Cell-Based LSI Design**
Hank Mueller, Manager, Design Systems Engineering, Semi-Custom Products, RCA Solid State, Somerville, NJ

10/5 **Hardware Aids in Logic Simulation**
Nick van Brunt, Vice President of R & D, XYCAD Corp., Roseville, MN

WEDNESDAY, November 9
9:00 to 11:00 A.M.

11 Recent Applications In Voice Technology

After a brief overview of speech technology and its benefits, a number of individuals who currently use speech in their product/application will present first hand experience in this Session.

Session Organizer:
Ann E. Conrad, Manager, Marketing Services, Votan, Fremont, CA

Session Chairman:
Jerry Johnson, Regional Sales Manager, Votan, Fremont, CA

11/1 **Human Engineered Robot for the Home**
Joseph Bosworth, President, RB Robot Corp., Golden, CO

11/2 **Interactive Application Programming Without a Keyboard**
Roger Billings, President, Billings Corp., Indianapolis, MO

11/3 **Integrating a Voice Systems With Your Phone and LAN**
Richard Melnicoff, Product Manager, Votan, Fremont, CA

11/4 **Incorporating Voice in the Microcomputer Environment**
Gene Sapp, President, SCI Systems, Inc., Huntsville, AL

WEDNESDAY, November 9
9:00 to 11:00 A.M.

12 LSI Modem Integration

Today's data products are adding advanced networking and data base access capabilities while reducing their cost by integrating data communication hardware. Session attendees will receive a fundamental understanding of modem operation and a practical design technique that will enable the non-modem engineer to integrate a modem using LSI components.

Organizer and Chairman:
Stephen J. Durham, Director of Marketing, Cermetek Microelectronics, Inc., Sunnyvale, CA

12/1 **Get Top Performance With Single Chip P²CMOS Modems**
Carlos Laber, Staff Engineer, National Semiconductor Corp., Santa Clara, CA

12/2 **Intelligent 212A-Type Modem Integration**
Stephen J. Durham, Director of Marketing, Cermetek Microelectronics, Inc., Sunnyvale, CA

12/3 **CMOS LSI Modem Technology Enhances the Role of the Digital PBX**
Al Mouton, MOS Telecommunications Product Planning Manager, Motorola, Semiconductor Product Group, Austin, TX

12/4 **1200 BPS Modem Application**
Kerry Hanson, Telecom Design Manager, Texas Instruments, Inc., Houston, TX

12/5 **High Speed Short Haul Single Chip Modems**
Jim Lange, Applications Manager, Standard Products, Exar Integrated Circuits, Inc., Sunnyvale, CA

WEDNESDAY, November 9
12:30 to 2:30 P.M.

13 New CAD Tools for Programmable Logic

A new breed of programmable logic devices is now becoming available. The density, architectures, and features of these circuits make them attractive alternatives to gate arrays and custom VLSI. The highly sophisticated computer-aided design tools available as support for these new devices will be emphasized in this Session.

Organizer and Chairman:
Vincent J. Coli, Applications Engineer, Monolithic Memories, Inc., Santa Clara, CA

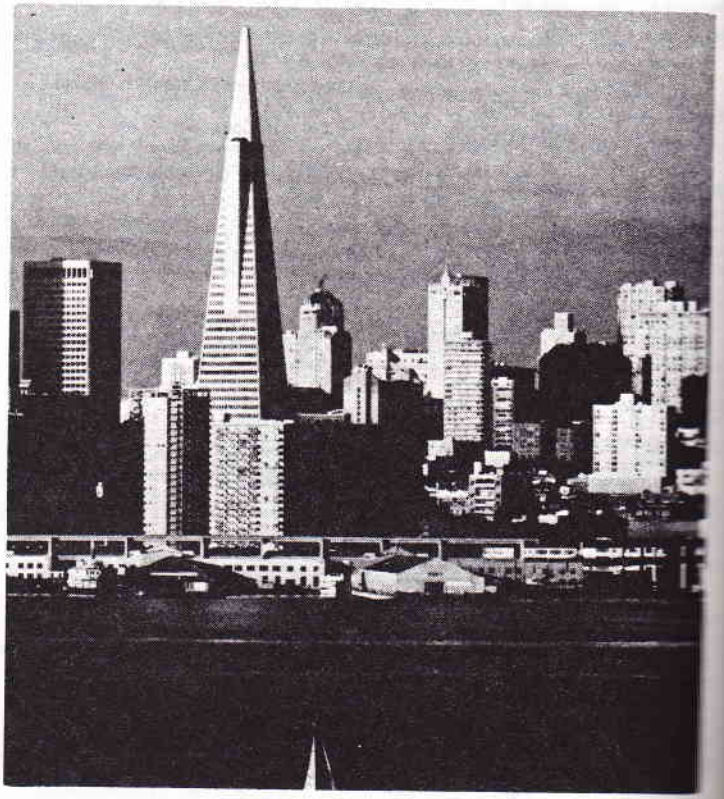
13/1 **A CAD Environment for Logic Design**
Phillip Sheu, Product Planning & Applications Engineer, Advanced Micro Devices, Inc., Sunnyvale, CA

13/2 **Testing Algorithms for LSI PALs**
Imtiyaz Bengali, and Vincent J. Coli, Applications Engineers, Monolithic Memories, Inc., Santa Clara, CA

13/3 **A Programmable Logic CAD Station**
Michael A. Mraz, Product Manager, Data I/O, Redmond, WA

13/4 **Second Generation PAL Programmers**
Usha Ramaswamy, Systems Analyst, Structured Design, Inc., Santa Clara, CA

13/5 **A Universal Approach To Programming and Functional Testing of Programmable Logic Devices**
Eli Farkash, Director of Engineering, Digelec, Inc., Scottsdale, AZ



WEDNESDAY, November 9
12:30 to 2:30 P.M.

14 Applications of Machine Vision in Electronics

Machine vision has become an important tool for automating inspection and assembly operations. Speakers representing equipment suppliers as well as machine vision users will describe their experiences with a variety of applications in electronics manufacturing in this session.

Organizer and Chairman:
John E. Trombly, President, Octek, Inc., Burlington, MA

14/1 Machine Vision Technology Primer
Perry West, Principal, Automated Vision Systems, Campbell, CA

14/2 Automated Visual Inspection of Keyboards
John E. Trombly, President, Octek, Inc., Burlington, MA

14/3 A Pattern Recognition System for Automated Wafer Alignment
Gary Dezotell, Senior Engineer, View Engineering, Chatsworth, CA

14/4 Managing Complexity in Vision - Based Systems
Hans J. Rutishauser, Senior Engineer, and Robert L. Jeffcoat, Manager, Applied Dynamics Division, Foster-Miller, Inc., Waltham, MA

WEDNESDAY, November 9
12:30 to 2:30 P.M.

15 VLSI Simplifies Customer Access to The ISDN

Enhanced services in telecommunications - often called the ISDN or integrated services digital network - is upon the telecom systems designer. Facilitating this requirement for new digital communications are various LSI and semiconductor devices. This Session will explore the variety of capabilities required for voice and data communications which can be supported only by the breadth of silicon capability from bipolar through MOS VLSI circuits.

Session Organizer:
Fred H. Cherrick, Marketing Manager, Intel Corp., Chandler, AZ

Session Chairman:
Carm Stevens, Product Marketing Manager, Intel Corp., Chandler, AZ

15/1 Advanced Generation Integrated SLIC
Peter Meza, Principal Engineer, Harris Corporation, Melbourne, FL

15/2 Partitioning Digital Telecommunications Systems For Implementation in Silicon
Les Thurlow, Director of Product Management, Mitel Inc., Kanata, Ontario, Canada

15/3 The Impact of CMOS LSI Integration on Voice and Data Networks
Al Mouton, Marketing Manager, Motorola, Inc., Austin, TX

15/4 Advanced Telecom Products Support
Fred H. Cherrick, Marketing Manager, Intel Corp., Chandler, AZ

WEDNESDAY, November 9
3:30 to 5:30 P.M.

16 New Tools For Designing With Programmable Logic

Field Programmable Logic Arrays are quickly growing in use, replacing SSI and MSI logic. Sophisticated computer-based software, and a new breed of hardware design tools will determine the rate of growth in the use of these devices. This Session will provide a review of several such software and hardware tools.

Organizer and Chairman:
Stephen Walters, Marketing Manager, Valley Data Sciences, Mountain View, CA

16/1 Computer Based Functional Test Grading of Programmable Logic
Bob Gruebel, Manager Programmable Logic, Texas Instruments, Inc., Dallas, TX

16/2 A Universal Approach To The Programmable Logic Revolution
Bob Osann, President, Assisted Technology, San Jose, CA

16/3 Programmable Logic Workstation For Programmable Logic Devices
Stephen Walters, Marketing Manager, Valley Data Sciences, Mountain View, CA

16/4 Test Vector Generation For Programmable Logic Devices
Chris Humphreys, Technical Director of Engineering, Stag Microsystems, Sunnyvale, CA

16/5 System Advantages Of Programmable Logic
Danesh M. Tavana, and Vince Coli, Application Engineers, Monolithic Memories, Inc., Santa Clara, CA

WEDNESDAY, November 9
3:30 to 5:30 P.M.

17 Controlling Static Electricity Damage To Microprocessors

Microprocessors of increasing sensitivity to static electricity are being used in more commercial and military product by more companies. Omnipresent static electricity can be extremely costly in low production rate field repairs, warranty replacements and customer relations. This Session will describe the problem, causes and proven solutions in assembling, handling, storing and shipping microcircuit products.

Session Organizer:
Roger E. Holmes, President, Roger E. Holmes & Associates, Los Angeles, CA

Session Chairman:
George A. Mellevold, Marketing Manager, Ungar Division, Eldon Industries, Inc., Compton, CA

17/1 Preventing Static Electricity Damage in Assembly and Repair
Tom Koltuniak, Product Development Manager, Ungar Div., Eldon Industries, Inc., Compton, CA

17/2 Preventing Static Electricity Damage in Handling, Shipping and Storage
William Lybrand, President, Consultex, Granada Hills, CA

17/3 Military Requirements for Controlling Static Electricity Damage to Microprocessors
Keith Olson, President, Controlled Static, Inc., Div. CSS Industries, Santa Fe Springs, CA

17/4 An Overview of the Static Electricity Problems and Solutions
Hank Smith, President, H & S Industries Div., Harvin Corp., Santa Fe Springs, CA

WEDNESDAY, November 9
3:30 to 5:30 P.M.

18 Alternative Approaches To Digital Signal Processing

With recent advances, designers of signal processing systems can draw on an increasingly broad range of general purpose Digital Signal Processing (DSP) products. This Session will focus on particularly good representatives of distinctive approaches to DSP designs.

Organizer and Chairman:
Dr. Ted Dintersmith, Strategic Marketing Manager, Analog Devices, Inc., Norwood, MA

18/1 DSP Building Blocks Allow Resource Optimization
Bernie New, Manager of Array Processor Product Planning and Applications, Advanced Micro Devices, Sunnyvale, CA

18/2 Building a Digital Signal Processing System Around CMOS Parts
Jerry Nuttall, Senior Design Engineer, Analog Devices, Inc., Salt Lake City, UT

18/3 A Single Chip Approach to Digital Signal Processing
Lee V. Kaplan, Applications Engineer, Texas Instruments Incorporated, Houston, TX

18/4 Floating Point - The Second Generation for Digital Signal Processing
Jeff Haight, Manager, Digital Applications, TRW LSI Products, La Jolla, CA

THURSDAY, November 10
9:00 to 11:00 A.M.

19 User-Oriented Tools For Custom VLSI/LSI Design

The custom VLSI explosion will result in 10 to 20 thousand new designs each year. Solving the user-maker interface will be more important than ever before since clearly users will be creating most of these designs in-house. This Session will address: What are the requirements for a good VLSI design tools from a user's point of view? What tools are presently available and what must the systems designer know to use them effectively?

Session Organizer:
Stephen E. Grossman, President, Stephen E. Grossman, Inc., Los Altos, CA

Session Chairman:
Donald E. Farina, Vice President & General Manager, Dumont Alphatron, Cupertino, CA

19/1 How To VLSI for Systems Designers
Robert H. Norman, Member of Technical Staff, Singer Kearfott Div., Wayne, NJ

19/2 Gate Array Design Approach -A Variety of Logical Structures
Wilfred Corrigan, President, and Rob Walker, Vice President Engineering, LSI Logic Corp., Milpitas, CA

19/3 The Evolution of Cell Libraries as User Tools
David R. Dick, Manager, Engineering, Dumont Alphatron, Inc., Cupertino, CA

19/4 Integrated CAD System for Custom IC Design
Dr. James R. Tobias, Director, Technical Information Systems, American Microsystems, Inc., Santa Clara, CA

19/5 Standard Cells and a Successful Design Strategy -Cause and Effect
Dr. Ralph Schauer, Vice President, CAD, Ford Microelectronics, Inc., Colorado Springs, CO

THURSDAY, November 10
9:00 to 11:00 A.M.

20 Videotex - A New Information Distribution Medium

In the emerging Information Age, videotex could become the medium for linking millions of people through television sets, personal computers, and communicating word processors to networks of vast databases. Online news, banking and shopping are already possible through existing networks. Additionally, a new service for the electronics industry will be described.

Organizer & Chairman:
Alan P. Brigish, President, Information Systems Marketing Inc., Wilton, CT

20/1 An Overview of Videotex in the USA & Abroad
Alan P. Brigish, President, Information Systems Marketing Inc., Wilton, CT

20/2 Videotex Standards - The North American Presentation Level Protocol Syntax
Sam Berkman, Project Manager, Consumer Information Services, American Bell Incorporated, Parsippany, NJ

20/3 A New Service for the Electronics Industry - The Electronic Yellow Pages
Gary L. Holland, Vice President, Adformation Incorporated, Wilton, CT

20/4 The Times Mirror Videotex Service in California
James Holly, President, Times Mirror Videotex Services, Costa Mesa, CA

THURSDAY, November 10
9:00 to 11:00 A.M.

21 Protecting and Exploiting Technical Developments: Basics For Entrepreneurs, Engineers and Software Developers

This Session will provide a working knowledge of how to protect and exploit technical developments and avoid loss of rights, including: basic procedures for protecting and exploiting rights in hardware, software, and research developments; employed engineer's rights; contracting with the Government and Universities; and R&D financing alternatives and related tax advantages.

Organizer and Chairman:
Michael A. Lechter, Esq., Partner, Cushman, Darby & Cushman, Washington, D.C.

21/1 Protecting Rights in Hardware, Firmware & Software Developments
Michael Allen Lechter, Esq., Partner, Cushman, Darby & Cushman, Washington, D.C.

21/2 Tax Aspects and Financing Alternatives for R&D Activities
Howard Busbee, Esq., Partner, CPA, Coopers & Lybrand, Atlanta, GA

21/3 Employed Inventor's Rights
Mikio Ashimaru, Patent Counsel, John Fluke Manufacturing Co., Inc., Everett, WA

21/4 R&D Contracts and the Issue of Rights in Resulting Developments
Jay Wilson, Legal Officer, Richard P. Dobb, Associate Legal Officer, and William T. Gerl, Assistant Legal Officer, Georgia Institute of Technology, Atlanta, GA

THURSDAY, November 10
12:30 to 2:30 P.M.

22 The Emerging Role of Semicustom LSI: A Long-Term Perspective

To help potential semicustom-IC users formulate informed long-term product-development plans, this Session will cover the silicon and CAD-development trends that are likely to determine the future complexion of user-designed chips.

Organizer and Chairman:
Andy Rappaport, Senior Editor, EDN Magazine, Boston, MA

22/1 Determining Semicustom-IC User's Needs
Andy Rappaport, Senior Editor, EDN Magazine, Boston, MA

22/2 Customer/Vendor Roles in the Custom-Circuit World: Benefits and Pitfalls
Peter Jones, Foundry Operations Manager, Intel Corp., Chandler, AZ

22/3 Trends in CMOS Gate Arrays
Robert Lipp, Chairman, California Devices Inc., San Jose, CA

22/4 Semicustom Alternatives for System Design and Manufacturing
O.B. Feltman, Marketing Manager, Custom Components Div., Texas Instruments Incorporated, Dallas, TX

22/5 Directions in Semi-Custom Evolution
Gordon Hoffman, General Manager, United Technologies Microelectronics Center, Colorado Springs, CO

THURSDAY, November 10
12:30 to 2:30 P.M.

23 VLSI Logic to Support High-Speed Bit Streams in LANs and Winchesters

This Session will be a presentation of various state-of-the-art CA[illegible] system-level solutions in [illegible] drive technologies. [illegible] include enhancing reliability of [illegible] serial data transmissions, buffering high-speed serial data, LAN protocols and VLSI controllers and peripherals used in LANs and disk drives.

Organizer and Chairman:
Suneel Rajpal, Senior Product Planning Engineer, Monolithic Memories, Inc., Santa Clara, CA

23/1 Serializing FIFOs and Burst-Error Processor Team Up To Enhance Serial Data Reliability
Danesh Tavana, Engineer, Advanced Product Planning, Nadia Sachs, Staff Engineer, Advanced Product Planning, and Suneel Rajpal, Senior Product Planning Engineer, Monolithic Memories, Inc., Santa Clara, CA

23/2 Ethernet Type Systems
R.V. Balakrishnan and Herb Sneider, National Semiconductor, Santa Clara, CA

23/3 Impact of Protocols on VLSI Implementation for Disks and LANs
Sunil Joshi, Section Manager, and Venkatraman Iyer, Applications Engineer, Advanced Micro Devices, Sunnyvale, CA

23/4 CMOS Manchester Code Converter for Ethernet
Dado Banatao, Microprocessor Engineering Manager, and Gerald Mossman, Peripherals Strategic Marketing Manager, Seeq Technology, San Jose, CA

23/5 LSI/VLSI Encapsulations Considerations of Token-Passing LANs
Om Agrawal, Manager of Architecture Engineering, Synertek, Santa Clara, CA

THURSDAY, November 10
12:30 to 2:30 P.M.

24 Searching for Engineering Information Online: How Do You Get Your Answers?

The Information Age is upon us and the engineer, more than any other professional, needs to keep aware of new trends in managing information. This Session will demonstrate techniques for retrieving engineering information online. Videotaped demonstrations will be presented.

Organizer and Chairman:
Cathy Ferrere, Manager, INSPEC Dept., IEEE, Piscataway, NJ

24/1 Dialog's Engineering Databases
Dana Ellingen, Marketing Representative, Dialog Information Services, Inc., Palo Alto, CA

24/2 Compendex and Engineering Meetings: Two Databases for Engineers
Geoff Worton, Marketing Manager, Engineering Information, Inc., New York, NY

24/3 INSPEC: The Engineers' Guide to the Information Age
Ron S. Hagerman, Administrator, Online Training, INSPEC/IEEE, Piscataway, NJ

Wescon/83 Film Theatre

The Wescon/83 Film Theater will present a program of technical and general interest films in Moscone Center. The program will start at 9:30 AM, Tuesday, Wednesday, Thursday and Friday, November 8, 9, 10, and 11, 1983. Each film will be shown twice daily.

The films were selected by a committee under the leadership of Byron E. Thinger, Pacific Gas and Electric Company, San Francisco, California. Wescon/83 wishes to acknowledge the help of the Information Film Producers of America for its cooperation in obtaining the films.

Windows in Time
Bill Stokes Associates
9:30 AM and 2:00 PM

Chrysalis*
Los Alamos National Laboratory
10:05 AM and 2:35 PM

CAD/CAM - Computer-Aided Design, Computer-Aided Manufacture
Los Alamos National Laboratory
10:35 AM and 3:05 PM

The Solar Film
Pyramid Film and Video
10:55 AM and 3:25 PM

One with the Earth - Clean Energy from Hot Dry Rock
Los Alamos National Laboratory
11:10 AM and 3:40 PM

Ballet Robotique
Pyramid Film and Video
11:35 AM and 4:05 PM

The Exploration of Mars
Benchmark Films, Inc.
11:50 AM and 4:20 PM

Sea Flight
Pyramid Film and Video
12:10 PM and 4:40 PM

*Selected by Committee as Best Film

24/4 Macro Services in a Micro Company: Information Services at Apple Computer
Monica Ertel, Supervisor, Library and Information Services, Apple Computer, Cupertino, CA

24/5 Overview - The Engineer in the Information Age
Cathy Ferrere, Manager, INSPEC Dept., IEEE, Piscataway, NJ

THURSDAY, November 10
3:30 to 5:30 P.M.

25 Functional Cells Define New "Standard" Products

The maturing of a functional cell approach along with capabilities for very large scale integration (VLSI) is creating new market possibilities for IC manufacturers and their customers. This Session will explore how OEMs are making use of cells to enter new markets quickly, thus satisfying high-performance, application-specific needs.

Organizer and Chairman:
H. Lyle Supp, Manager, Strategic Planning, American Microsystems Inc., Santa Clara, CA

25/1 Session Overview
H. Lyle Supp, Manager, Strategic Planning, American Micorsystems Inc., Santa Clara, CA

25/2 Hierarchical Cell Approach Speeds Design of Customizable Video Display Controller
John Cofield, Design Engineer, AMI, Santa Clara, CA

25/3 M6805 Family Offers Multi-Function Capabilities
James Farrell III, Manager of Tech. Communications, Motorola, Austin, TX

25/4 Cellular Methodology Speeds LAN Chip Design Networks
Dane Elliott, Microcomputer Products Marketing Manager, Seeq, San Jose, CA

25/5 Macro Architectures Simplify Standard Product Designs
V.R. Ranganath, Strategic Marketing Engineer, Synertek, Santa Clara, CA

25/6 Semi Custom Designs Broaden Microcomputer Family By Utilizing Modular Design Techniques
Terry Schmidt, Applications Manager, Texas Instruments Incorporated, Houston, TX

THURSDAY, November 10
3:30 to 5:30 P.M.

26 Serial Bus Structures For Microcomputers — Small Area Networks

The increasing usage of microcomputers in electronic equipment demands a cost effective means of interconnecting them and their peripherals. Thus, the "Small Area Network". This Session will provide information on various Small Area Networks, their applications, and their tradeoffs compared to traditional data communications protocols and Local Area Networks.

Session Organizer:
Alex Goldberger, Technical Marketing Manager, Excel Microelectronics, Milpitas, CA

Session Chairman:
Cecil Kaplinsky, Manager, Microcomputer Architecture, Signetics Corp., Sunnyvale, CA

26/1 An Introduction to Small Area Networks
Cecil Kaplinsky, Manager, Microcomputer Architecture, Signetics Corp., Sunnyvale, CA

26/2 Microwire - The Power of Simplicity
Leonard Distaso, Senior Applications Engineer, National Semiconductor Corp., Santa Clara, CA

26/3 The D²B - A Digital Data Bus for Small Area Networks
Chuck Seaborg, Design Manager, Signetics Corp., Sunnyvale, CA

26/4 Using the 8051's 9-Bit Serial Mode
Al Steinberg, Product Marketing Manager, Intel Corp., Chandler, AZ

26/5 The I²C Bus - An Interconnect Structure for Integrated Circuits
Ad Moelands, Strategic Product Marketing Manager, Philips International BV, Elcoma Div., Eindhoven, The Netherlands

FRIDAY, November 11
9:00 to 11:00 A.M.

27 Advances In Precision Converters

Converters, analog to digital and digital to analog, are the essential interface between data processors of all types, and the "real World" which is determinedly analog. As digital electronics grows in scope, interfaces become more and more important. This Session will cover developments in the design, application and testing of precision converters.

Organizer and Chairman:
James Mitchell Bryant, European Applications Manager, Analog Devices Marketing Ltd., Newbury, Berks, England

27/1 The Evolution of Converter Characteristics, Applications & Testing
E. A. Sloane, Manager, Advanced Development, Fairchild Analog Test Systems Div., San Jose, CA

27/2 New Designs and Processes for High Resolution DAC's
Doug Grant, New Product Marketing Manager, Converter, Analog Devices Semiconductor, Wilmington, MA

27/3 Very High Speed Precision Converters
W. Demmer, Manager, Data Conversion Systems, Valvo, GmbH RHW, Hamburg, W. Germany

27/4 The Design of 12 Bit Data Conversion Systems
Scott Fritz, Section Head/Design Engineer, American Micro Devices, Sunnyvale, CA

27/5 Precision 16-Bit DAC Puts All Components On One Chip
Jimmy R. Naylor, Senior Design Engineer, Burr Brown Research Corp., Tucson, AZ

27/6 A Monolithic 4½ Digit Integrating ADC
Baker Scott, Manager, Data Converter Design, Steve Bolger and Poching Liu, Siliconix Inc., Santa Clara, CA

FRIDAY, November 11
9:00 to 11:00 A.M.

28 Nonvolatile RAMs and E²PROMs For New Applications

Various forms of semiconductor nonvolatile memory have been available for many years. They have progressed, over the past two years, to the point where they are considerably easier for the designer to use. The

audience will learn of the latest user features available from a cross section of manufacturers in this Session.

Session Organizer:
George Landers, Applications Manager, Xicor, Inc., Milpitas, CA

Session Chairman:
Wallace E. Tchon, Vice President Strategic Planning, Xicor, Inc., Milpitas, CA

28/1 **Intelligent EEPROM Adds New Dimensions to Nonvolatile Memory Applications**
Fred Jones, Memory Applications Manager, Inmos, Colorado Springs CO

28/2 **Design Considerations for Nonvolatile Memories**
William Scharrenberg, Product Marketing Manager, Programmable Memories, Intel, Santa Clara, CA

28/3 **Applications Using E² Technology**
Jim Oliphant, Corporate Application Technical Manager, Seeq Technology, San Jose, CA

28/4 **User Features in New E²PROM Designs**
Burt Courlang, MOS Memory Marketing Strategic Planning, and Masood Alavi, Manager E²PROM Applications, National Semiconductor, Santa Clara, CA

28/5 **NOVRAMs and E²PROMs With User Oriented Features**
George Landers, Applications Manager, Xicor, Inc., Milpitas, CA

FRIDAY, November 11
9:00 to 11:00 A.M.

29 Advanced In-Circuit Emulator Design

The introduction of advanced 16/32 bit microprocessors have been accompanied by various solution for emulation support. This Session will examine the tools available today and the design rationale for the approaches taken by each manufacturer and the future of in-circuit emulation.

Organizer and Chairman:
Carl Ching, Senior Prod. Marketing Engineer, Development Systems, National Semiconductor Corp., Santa Clara, CA

29/1 **Solutions to the NS16000 Family Microprocessor Emulation Design Challenges**
Carl Ching, Senior Prod. Marketing Engineer, Development Systems, National Semiconductor Corp., Santa Clara, CA

29/2 **Debugging in a Software Intensive Environment**
Buzz Shaddel, New Instrumentation Product Marketing Manager, Intel Corp., Hillsboro, OR

29/3 **Approaches for Truly Transparent Emulation**
Dave Baxter, Section Manager, Instrumentation Design Group, Motorola Micro Systems, Tempe, AZ

29/4 **A Comprehensive Processor Support Strategy**
John Marshall, Marketing Communication Manager, Hewlett-Packard, Colorado Springs, CO

29/5 **Advanced In-Circuit Emulator Design**
Mary Vandenheede, Manager, Developmental Products Marketing, Zilog, Campbell, CA

FRIDAY, November 11
12:30 to 2:30 P.M.

30 Gate Arrays - The User/Vendor Relationship

This Session will cover issues to consider in the procurement of gate arrays, from both the user and vendor points of view. The knowledge and skills required of all participants for an effective gate array program and how this differs from the purchase of standard product.

Organizer and Chairman:
Jean Page, Industry Analyst, Dataquest Inc., San Jose, CA

30/1 **The Future Use of Gate Arrays - A General Perspective**
Stan Bruederle, Manager Semiconductor User Information Service, and Jean Page, Industry Analyst, Dataquest Inc., San Jose, CA

30/2 **The Role of the Third Party Design House in the Development of Semi-custom Devices**
John Cosley, President, Source III, Inc., San Jose, CA

30/3 **Technology Aspects of the Gate Array User/Vendor Interface**
Charlie Hardage, Applications Engineer Manager, California Devices Inc., San Jose, CA

30/4 **Gate Arrays - A Vendor's Perspective**
Keith Lobo, Product Marketing Manager LSI Logic Corp., Milpitas, CA

30/5 **Gate Arrays From a User's Viewpoint**
Gary Lee, Supervisor of Autopilot Research, Boeing Aerospace Co., Seattle, WA

FRIDAY, November 11
12:30 to 2:30 P.M.

31 Design Considerations For '80s Instrumentation

Companies involved in designing measurement tools are influenced both by the needs of their customers and the availability of components or technologies that enable them to meet those needs. This Session will provide a better understanding and appreciation of the need to consider these factors and to integrate them into the planning process for new generations of products.

Session Organizer:
Lynn Neillie, Public Relations Supervisor, Portable Instruments Business Unit/Tektronix, Inc., Beaverton, OR

Session Chairman:
John Taggart, Project Manager, Portable Instruments Business Unit/Tektronix, Inc., Beaverton, OR

31/1 **Field Measurements...Past, Present and Future**
Thomas W. Weathers, Consulting Field Engineer, Amdahl Corp., Sunnyvale, CA

31/2 **Integrating Intelligence Into Instrumentation To Enhance Capability**
Chuck Newcombe, Business Unit Planning Manager, General Test and Service Div./John Fluke Mfg. Co., Inc., Everett, WA

31/3 **Instrumentation Networks With Distributed Control**
Richard D. Thornton, Sc.D., Professor of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA

31/4 **Components for Instruments That Employ Digital Signal Processing Technologies**
Dan Watson, Senior Applications Engineer, TRW LSI Products, San Diego, CA

31/5 **Applying New Technologies to Meet Instrument Users' Needs**
Rod Bristol, Senior Engineer, Portable Instruments Business Unit/Tektronix, Inc., Beaverton, OR

FRIDAY, November 11
12:30 to 2:30 P.M.

32 Tools for 16-Bit Software Development

This Session will present comparisons of software development approaches and tools for major 16-bit micros. Emphasis will be on software development not on the differences among the micros and will include coverage of standalone and network development systems, integrated logic analyzer - development systems, and cross-development using large computers.

Organizer and Chairman:
Robert E. Hoffman, President, First Systems Corp., Manhattan Beach, CA

32/1 **Software Tools to Match Growing Microprocessor Sophistication**
James Handy, Product Manager for "C" Products, Intel Corp., Santa Clara, CA

32/2 **High Level Language Productivity Using the LANDS Tool Box**
James Besener, Manager, New Software Technology Development, Tektronix, Beaverton, OR

32/3 **Advanced System/Software Development Tools Using UNIX Systems V**
Fred Christiansen, Staff Software Engineer, Motorola, Inc., Microsystems Div., Tempe, AZ

32/4 **Cross-Compiling, Cross-Assembling, and Now Cross-Debugging**
Robert Hoffman, President, First Systems Corp., Manhattan Beach, CA

FRIDAY, November 11
3:30 to 5:30 P.M.

33 Small Digital Gate Arrays

This Session will provide a balanced survey of the problems and opportunities of the small gate array market place, from CAD equipment suppliers to IC manufacturer to final user.

Session Organizer:
Charlie Allen, Vice President, Engineering, Master Logic Corp., Sunnyvale, CA

Session Chairman:
Stephen R. Allen, President, Master Logic Corp., Sunnyvale, CA

33/1 **Mini-Arrays for CMOS Standard Products**
Thomas Cauge, Standard Products Manager, Semi Process Inc., Santa Clara, CA

33/2 **Interactive Design of Small Gate Arrays - A Progress Report**
Charlie Allen, Vice President, Engineering, Master Logic Corp., Sunnyvale, CA

33/3 **A CMOS Gate Array Family; A Perspective on Some Real Applications**
Alan M. Cox, Digital Marketing Manager, Interdesign, Scotts Valley, CA

33/4 **Silicon Breadboards - A Stepping Stone to Custom LSI**
Richard Pasco, VLSI Development Manager, Atari Home Computer Div., San Jose, CA

33/5 **Semi Automatic and Automatic Layout Tools for User-Defined ICs**
Larry Matheny, President, Matra Design Systems, Los Gatos, CA

33/6 **Future Directions in User Defined ICs**
Shlomo Waser, Director of Product Planning, Monolithic Memories Inc., Sunnyvale, CA

FRIDAY, November 11
3:30 to 5:30 P.M.

34 Alterable Microcomputers Usher In a Dynamic, New Era

An introduction and overview of the latest product developments from single chip microcomputer industry leaders will be the thrust of this Session. New and emerging semiconductor process technologies coupled with unique design elements will be presented.

Session Organizer:
W. Wade Wyatt, Strategic Planning Engineer, Motorola, Inc., Austin, TX

Session Chairman:
Bill Huston, Manager, MCU Applications, Motorola, Inc., Austin, TX

34/1 **Single Chip Microcomputer With EEPROM Allows Flexible System Design**
Lee Kaplan, Microcomputer Applications Engineer, Texas Instruments Incorporated, Houston, TX

34/2 **Innovative Microcomputers With a High Level of Integration Allow a Wide Range of Applications in Functional Space**
Brian Wilkie, Manager, System Design, MOS Microprocessor Div., Motorola, Inc., Austin, TX

34/3 **A New Single Chip Microcomputer Offers Design Flexibility for High End Applications**
Don Folkes, Applications Engineer, Mostek, Corporation, Carrollton, TX

34/4 **Will There Be ROM-Based Microcontrollers In 1985?**
Alex Toth, MCS-51 Product Line Manager, Intel Corp., Chandler, AZ

34/5 **EPROM Based Microcomputers Open Up New Applications**
Jacob Fattal, Marketing Manager, NEC Electronics Microprocessor Div., Natick, MA

FRIDAY, November 11
3:30 to 5:30 P.M.

35 Changes In Tools For The Microprocessor Software Engineer

This Session will explain how software development and integration of microprocessor-based designs is significantly trailing those hardware advances in the field. Progress is being made in the realization of the problems faced by the software integrator with the development of specialized tools to aid in the integration of software for microprocessor-based designs.

Organizer and Chairman:
Richard Drohan, Marketing Manager, Microcomputer Development Systems, Gould Design & Test Systems, Santa Clara, CA

35/1 **High-Level Language Product Design for Microprocessors**
Douglas Johnson, Marketing Manager, Software Development, Tektronix Design Automation Div., Beaverton, OR

35/2 **Evaluating Software Performance In Microprocessor Design**
Gail Hamilton, Product Marketing Manager, Development Systems, Hewlett-Packard Logic Systems Div., Colorado Springs, CO

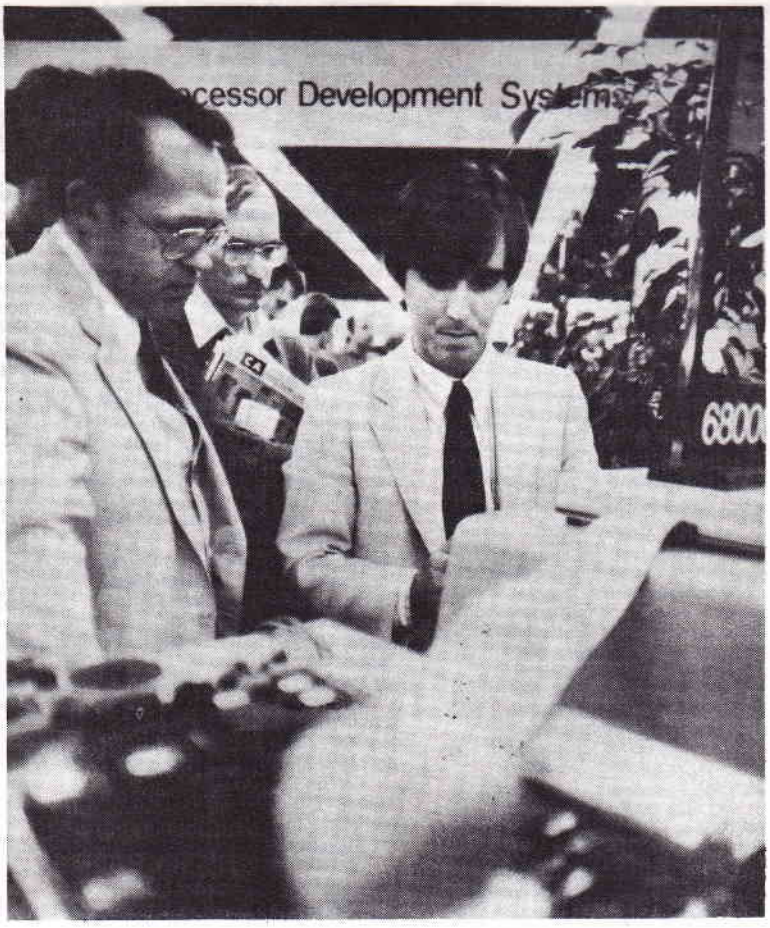
35/3 **Software Tools for Embedded Systems**
Ron Kole, Product Manager, Software Products, Intermetrics, Cambridge, MA

35/4 **Hardware-based Tools for High-Level Language Debug**
Frank Yee, Engineering Manager, Software Development, Gould Design & Test Systems, Santa Clara, CA

Mini/Micro West

1983 Computer Conference and Exhibition

Wescon Attendees Invited



Wescon registrants are invited to attend Mini/Micro West-83, the region's only major technical symposium which directly addresses the OEM marketplace. Mini/Micro West is designed to bring together manufacturers and suppliers of small computers, peripherals, data communications, software, and other computer-related services with an audience of OEM design/systems engineers, assemblers, systems integrators and software specialists. An estimated 30,000 attendees will view the exhibition, where over 200 companies will be displaying the latest in product and process innovations. Attendees can also attend any of the 24 Professional Program sessions, with no additional registration fee. Mini/Micro West is being held November 8 - 11 in Brooks Hall, which adjoins Civic Auditorium. Free shuttle buses will run continuously between Wescon/83, at Moscone Convention Center, and the Civic Auditorium.

***Please Note:** Mini/Micro West exhibits and the Professional Program are being held at Brooks Hall/Civic Auditorium.*

***Important Note:** The Professional Program information contained in this Preview is subject to change. Consult the Official Program available at the show.*

Professional Program

TUESDAY, November 8
9:00 to 11:00 A.M.

1 LAN Silicon and Systems

This Session will cover the implementation of LAN schemes in silicon, and their realization in system architectures.

Organizer and Chairman:
Vernon Coleman, Manager, Local Area Networking, Advanced Micro Devices, Inc., Sunnyvale, CA

1/1 **Complete Implementation of Ethernet/IEEE802-3 In VLSI**
Vernon Coleman, Manager Local Area Networking, Sunil Joshi, Section Manager Front End Networks, Bud Martin, Senior Product Planning & Applications Engineer, and Russel DePina, Product Planning & Applications Engineer, Advanced Micro Devices Inc., Sunnyvale, CA

1/2 **State Machine Implementation of Ethernet for the S100 Bus**
Dr. David W. Sear, President, Perex, Inc., San Jose, CA

1/3 **Node Processor Architecture for Ethernet**
Larry Green, President, Communication Machinery Corp., Santa Barbara, CA

1/4 **Efficient Token Passing Through Silicon**
Mark Stieglitz, Product Line Manager, Communications Products, Western Digital Corp., Newport Beach, CA

TUESDAY, November 8
9:00 to 11:00 A.M.

2 16/32-Bit Microprocessor Architectures

New 16/32-Bit Microprocessor Architectures are becoming very similar to those of mini-computers. Performance enhancements such as a large linear addressing space, virtual memory, debugging aids such as hardware and software traps, 32-Bit registers, and co-processor interfaces are becoming critical requirements instead of selling features.

Organizer and Chairman:
Michael A. Davidson, M68000 Technical Marketing Engineer, Motorola, Incorporated, Austin, TX

2/1 **The 16000 Microprocessor Family**
Richard Mateosian, Technical Marketing Manager, National Semiconductor Corporation, Santa Clara, CA

2/2 **The IPAX 286 Architecture**

TUESDAY, November 8
12:30 to 2:30 P.M.

3 Upper Level Protocols for Local Area Networks

As more installations of local area networks expand within organizations, communications protocols become a more significant issue. Lower level protocols of the ISO's Open System Integration model have largely been addressed, while the similary critical upper levels remain relatively unexplored. This Session hopes to resolve that situation.

Organizer & Chairman:
Mark Hall, Analyst/Writer, Sytek, Inc., Mountain View, CA

***3/1* Real World Implementation of Upper Level Protocols**
Dr. Douglas Gage, Physicist, Naval Oceans Systems Center, San Diego, CA

***3/2* Experiences Providing Support for XNS Protocols**
Dr. Monte Lien, Manager, Architecture, Bridge Communications, Cupertino, CA

***3/3* ISO's Open System Integration Upper Level Protocols on a Broadband Local Area Network**
Gregory Ennis, Manager, Network Technology, Sytek, Inc., Mountain View, CA

TUESDAY, November 8
12:30 to 2:30 P.M.

4 Advanced Peripherals For 16/32-Bit Microprocessors

Today's microprocessor systems are challenging the performance of yesterday's minicomputers. In order to meet the need of high performance and throughput, peripherals such as DMA, Disk controllers, Floating Point Processors and Co-processors are required to compliment the 16/32-Bit microprocessors.

Organizer and Chairman:
Jack Browne, 68000 Marketing Manager, Motorola, Inc., Austin, TX

***4/1* High Performance Peripherals for the M68000 Family**
Bob Bierns, Senior Applications Engineer, Motorola, Inc., Austin, TX

***4/2* The 16000 Peripheral Family**
Richard Mateosian, Technical Marketing Manager, National Semiconductor Corporation, Santa Clara, CA

***4/3* Intelligent Controllers for the 68000 Family**
Hugh Logan, Jr., 16-Bit Product Manager, Rockwell International, Newport Beach, CA

***4/4* High Performance Intelligent Disk Controllers**
Steve Lau, 68000 Product Marketing Manager, Signetics, Sunnyvale, CA

***4/5* Advanced Systems Elements in the AM 9516 Universal DMA Controller**
James Williamson, Applications Engineer, American Micro Devices, Sunnyvale, CA

TUESDAY, November 8
3:30 to 5:30 P.M.

5 Protecting Codes In Private/Security-Sensitive Applications

Proprietary software, such as data encryption schemes, must be protected from software pirates. Add to this the investment value for developing microcomputer code, and the need for software security becomes clear. What are chip manufacturers doing to help solve this problem of theft, and just how secure are their solutions?

Organizer and Chairman:
Alex Toth, MCS-51 Product Manager, Intel Corp., Chandler, AZ

***5/1* Need for Software Security From a User's Point of View**
Paul Heinbach, Home Box Office, New York City, NY

***5/2* Keeping Software From Being Copied - A New Silicon Method**
Bill Huston, Applications Engineering Manager, Motorola, Inc., Austin, TX

***5/3* Secure EPROM's - A Micro Controller Offering of Proprietary Software Protection**
Alex Toth, MCS-51 Product Manager, Intel Corp., Chandler, AZ

***5/4* E²ROM Adaptive Security for Single Chip Microcomputers**
Dane Elliot, Microproducts Marketing Manager, Seeq Technology, Inc., San Jose, CA

TUESDAY, November 8
3:30 to 5:30 P.M.

6 Contrasting Memory Management Philosophies In 16/32-Bit Microprocessors

The speakers will present the memory management philiosphies embodied in the major microprocessor families. A panel discussion and audience questions will follow, focusing on linear vs. segmented logical addressing and paged vs. segmented virtual memory.

Organizer and Chairman:
Richard Mateosian, NS16000 Family Technical Marketing Manager, National Semiconductor, Santa Clara, CA

***6/1* The Virtual 68010**
Melody Moy, Software Engineer, Motorola Semiconductor, Austin, TX

***6/2* Demand Paged Virtual Memory With the Z8003**
Tom Cramer, Z8000 Strategic Marketing Manager, Zilog, Campbell, CA

***6/3* Memory Management Implementation on the IAPX286**
Jayaram Bhat, 286 Product Marketing Manager, Intel, Santa Clara, CA

***6/4* Elegant Memory Management: NS16000**
Richard Mateosian, NS16000 Family Technical Marketing Manager, National Semiconductor Corp., Santa Clara, CA

WEDNESDAY, November 9
9:00 to 11:00 A.M.

7 Flexible Terminals Used As Packaged Control Panels For Service, Setup And Control

As microprocessors become more powerful and inexpensive, their application inside test, measurement, control and computer peripheral equipment has become more commonplace. Packaged control panels address the need for more versatile operator interfaces. Design time is shortened and the engineering load reduced.

Organizer and Chairman:
William E. Fletcher, President, Termiflex Corporation, Nashua, NH

***7/1* Service of Rotating Memories Using a Hand-Held Terminal**
William Feagin, Maintainability Engineer Manager, Digital Equipment Corporation, Stow, MA

***7/2* New York Stock Exchange Experiences With On-Line Interactive Floor Control**
Erik J. Steiner, Director of Research and Development, New York Stock Exchange, New York, NY

***7/3* Survey of Commercially Available Packaged Control Panel Equipment**
C.R. Teeple, Vice President, Marketing, Termiflex Corporation, Nashua, NH

***7/4* Hand-Held Set Communicator for the Engine Test Set on the M1-Tank**
John F. Martin, Manager, Program Operations, RCA/Government Systems Div./Automated Systems, Burlington, MA

WEDNESDAY, November 9
9:00 to 11:00 A.M.

8 System Implementation Languages - Present and Future Directions

Languages are being created to allow system builders to effectively construct ever more complex products. These languages support not only the traditional areas served by assembly language, but also others such as testing and the construction of compilers. This Session examines some examples of these tools.

Organizer and Chairman:
Dr. Lynn Robert Carter, Language Technologist, Motorola Software Technology, Tempe, AZ

***8/1* Pascal Enhancements: Past and Future**
Vicki S. Walker, Instructor, Arizona State University Dept. of Computer Science, Tempe, AZ

***8/2* A Pragmatic Approach To Compiler Construction**
Donald Dunstan, Engineer, U.S. Software, Portland, OR

***8/3* Trends in Test Programming**
David D. Stubbs, Engineer, Tektronix, Inc., Computer Research Laboratory, Beaverton, OR

***8/4* Augmentation Language: An Extention to Other Languages**
Dr. Lynn Robert Carter, Language Technologist, Motorola Software Technology, Tempe, AZ

***8/5* S/SL: A Users Experience**
Dr. Mark Joliat, Manager, Intermetrics, Cambridge, MA

WEDNESDAY, November 9
12:30 to 2:30 P.M.

9 Chip/System Implementation Considerations For Videotex/Teletext Terminals

With advancement of Silicon Technology and with the emergence of worldwide videotex/teletext standards such as NAPLPS and NABTS, various low cost system LSI/VLSI chip solutions for videotex/teletext appear to be both feasible and attractive. This Session will discuss chip/system implementation considerations for NAPLPS (Videotext) and NABTS (Teletext) terminals. Issues of low cost VLSI solution and future direction in this technology will also be addressed.

Organizer and Chairman:
Om P. Agrawal, Manager, Architecture Engineering, Synertek, Inc., Santa Clara, CA

***9/1* NAPLPS Videotex Terminals**
J. Robert Burk, Jr., Vice President Technical Services, KEYCOM Electronic Publishing, Schaumburg, IL

***9/2* Implementation Considerations for NAPLPS Videotex**
Gerald Herbel, Systems Analyst, Synertek, Inc., Santa Clara, CA

***9/3* NABTS Teletext for the Consumer Market**
Mark Harger, Member of Engineering Staff, RCA, Indianapolis, IN

***9/4* LSI/VLSI Encapsulation Considerations For Videotex/Teletext**
Om P. Agrawal, Manager, Architecture Engineering, Synertek, Inc., Santa Clara, CA

WEDNESDAY, November 9
12:30 to 2:30 P.M.

10 Microcomputer and the C Language, Development Path of the Future

The C language is quickly becoming the standard for development in the realm of advanced microprocessors. This Session will examine the reasons behind C's recent growth in popularity, as well as its history, and an overview of the language itself.

Organizer & Chairman:
Jim Handy, Product Manager, Intel Corporation, Santa Clara, CA

***10/1* Source Level Debugging Technology for the C Language**
Steve Ness, Mark Williams Co., San Francisco, CA

***10/2* A User-Friendly C Compiler Designed for Programmers**
Mike Lehman, Director of Research and Development, Digital Research, Inc., Pacific Grove, CA

***10/3* A User's Perspective of the C Programming Language**
Douglas L. Bayer, Head of the Advanced System Design Dept., Bell Laboratories, Murray Hill, NJ

***10/4* A C Compiler For the IAPX-86 Family Architectures**
Ravi Kumar, Program Manager, Intel Corporation, Santa Clara, CA

***10/5* C Programming on a Workstation**
Bill Joy, Vice President of Research and Development, Sun Microsystems, Mountain View, CA

WEDNESDAY, November 9
3:30 to 5:30 P.M.

11 Architectural Requirements For An Engineering Workstation

This Session covers engineering workstations from the viewpoint of those supplying or integrating design automation systems. What are the computer architecture, data base, communication and operating system requirements? The audience will gain an understanding of the hardware and software requirements that influence the design, purchase and use of workstations.

Organizer & Chairman:
Don Laughlin, Product Marketing Manager, CAE Systems, Inc., Sunnyvale, CA

***11/1* Hardware and Software Requirements For an EEWS**
David M. Hoffman and Larry R. Hubbie, Engineering Managers, CAE Systems, Inc., Sunnyvale, CA

***11/2* Professional Workstations**
Dave Nelson, Vice President of Research & Development, Apollo Computer, Inc., Chelmsford, MA

***11/3* Workstations for OEM's**
Allan Wallack, Vice President of Marketing, Masscomp, Littleton, MA

***11/4* A Workstation For VLSI**
Terry Smith, Product Marketing Manager, Metheus Corporation, Hillsboro, OR

WEDNESDAY, November 9
3:30 to 5:30 P.M.

12 Experience With Modula-2

Modula-2 has been in use now for

some time. Experiences with the language from four radically different points of view will be presented. As a result, different views and uses of Modula-2 should be revealed along with an exposure to some of the constructs of this exciting, new language.

Organizer & Chairman:
A. Winsor Brown, Vice President, Volition Systems, Del Mar, CA

12/1 A Novice Programmer's View of Modula-2
John Craig, Editor, Journal of Pascal and Ada, Orem, UT

12/2 Experiences With Modula-2 on Apple III
Christopher T. Jewell, Apple II and III Pascal Prod. Manager, Apple Computer, San Jose, CA

12/3 Modular and Object Oriented Design in Modula-2
Richard F. Wiener, Assoc. Professor of Computer Science, University of Colorado at Colorado Springs, Colorado Springs, CO

12/4 The Module Library - Providing Modula-2 Program Portability Across Operating Systems
Joel McCormack, Vice President of Engineering, Volition Systems, Del Mar, CA

THURSDAY, November 10
9:00 to 11:00 A.M.

13 Advances in Microprocessors

The purpose of this Session is to describe new microprocessors, their capabilities and applications. The papers here describe five new microprocessors, for those who need to be aware of new devices to allow them to choose and apply when designing new systems.

Organizer & Chairman:
Frank Krupecki, 8X305 Marketing Manager, Signetics Corporation, Sunnyvale, CA

13/1 The 8X305 MicroController: A Special Processor of Intelligent Control Systems
Ray C. Pitts, Marketing Manager, Signetics Corp., Sunnyvale, CA

13/2 High Performance Microprogrammed Controller Architecture
Paul Po Loi Chu, Manager, Programmable Processor, Advanced Micro Devices - Product Planning and Applications, Sunnyvale, CA

13/3 Using the Alterable Microcomputer Ultra High Performance Low Cost Graphics Terminal
Jerry Baur, AMU Applications Manager, American Microsystems, Inc., Santa Clara, CA

13/4 A New High Performance Microprocessor with Z80 Software Compatability
Bill Carter, Design Manager, Zilog Incorporated, Campbell, CA

13/5 The 32032: An Ultrahigh Performance Microprocessor
Gary Martin, System Development Engineer, National Semiconductor, Santa Clara, CA

THURSDAY, November 10
8:00 to 11:00 A.M

14 Real-World Number Crunching

The steadily increasing speed demands of signal processing and scientific computation applications imply a need for more hardware speed gains than can be achieved through improvements in raw gate speed alone. Major speed enhancements are possible, however, through computer-architecture refinements, at both the system level and the component level. The papers in this Session describe some such recently achieved refinements emphasizing two major approaches: parallelism and pipelining. Parallelism increases the total amount of hardware resources which can simultaneously be brought to bear on a single problem. Pipelining aims at a 100% utilization or "duty cycle" of these hardware resources, by time-domain segmentation of the problem so that it can be handled on an "assembly-line" basis.

Organizer & Chairman:
Chuck Hastings, Product Planning Manager, Monolithic Memories, Inc., Santa Clara, CA

14/1 High Performance Digital Music Synthesis
Michael Alan Baxter, Design Engineering Consultant, Corvallis, OR

14/2 16 x 16 Flow-Through Multipliers Improve the Performance and Economics of Long-Word-Length Multiplication
Marvin Fox, Design Engineering Specialist, Chuck Hastings, Product Planning Manager, and Suneel Rajpal, Senior Product Planning Engineer, Monolithic Memories, Inc., Santa Clara, CA

14/3 A Practical Architecture for Feeding Number Crunchers
Gerry Feldkamp, Manager, Software Development, Aptec Computer Systems, Inc., Portland, OR

14/4 Cycle vs. Access Time: Optimizing Semiconductor Parts for Number Crunching
Alan E. Charlesworth, Senior Staff Engineer, and W. Eric Hall, Staff Engineer, Floating Point Systems, Inc., Beaverton, OR

14/5 Lucasfilm Audio Signal Processor and Music Instrument
John Snell, Senior Engineer, Lucasfilm Ltd., Computer Research and Development Div., San Rafael, CA

THURSDAY, November 10
12:30 to 2:30 P.M.

15 Independent Data/Instruction Stream Microprocessors

Emerging 16/32-Bit architectures for dedicated control applications are adapting Harvard-style organizations to improve performance. Reviews and comparisons of current product offerings will provide insight for designers into industry trends of real-time control microprocessors. Topics for discussion will include the NCR/32 family, the TMS320 family, and research being conducted at leading Universities on RISC and SIMAC microprocessors.

Organizer & Chairman:
Tom Miller, Director of VLSI Processor Products, NCR Corporation, Colorado Springs, CO

15/1 Performance of Harvard Architecture in TMS320
Kevin McDonough, Manager of Strategic Planning, Texas Instruments, Inc., Houston, TX

15/2 Architecture Comparison of Two MIPS
Vason P. Srini, Professor, Department of Computer Science, University of Alabama, Birmingham, AL

15/3 A Simple Multiple ALU Computer for Low Level Parallelism
Charles McDowell, Professor, University of California at San Diego, La Jolla, CA

THURSDAY, November 10
12:30 to 2:30 P.M.

16 The New Floating Point Standard: Implementation and Applications

The significance of and motivation for the IEEE standard will be explained, and a variety of hardware/software implementations will be discussed.

Organizer & Chairman:
Richard Mateosian, Technical Marketing Manager, NS16000 Family, National Semiconductor, Santa Clara, CA

16/1 What Good Is It?
W. Kahan, Professor, University of California at Berkeley, Berkeley, CA

16/2 High-Performance Floating Point Co-Processor for Protected Multi-User Systems
Jayaram Bhat, 286 Product Marketing Manager, Intel Corp., Santa Clara, CA

16/3 Floating Point Support for the NS16000 Family
Gary R. Martin, NS16000 Applications Engineer, National Semiconductor, Santa Clara, CA

16/4 Elementary Functions Based Upon IEEE Arithmetic
David Hough, Senior Member Technical Staff, Apple Computer, Cupertino, CA

16/5 Floating Point Power for the M68000 Family
Van Shahan, 68881 Project Technical Leader, Motorola Microprocessor Div., Austin, TX

16/6 ELXSI's 6400 Arithmetic Processor
George Taylor, Design Engineer, ELXSI, Inc., San Jose, CA

THURSDAY, November 10
3:30 to 5:30 P.M.

17 System Software In Silicon

The expanded storage capability of PROMs, EPROMs and microcomputer memories has made it possible to build entire microcomputer operating systems, system kernels, and application packages in silicon. This Session will explore some of the application advantages of on-board System Software in Silicon over similar software on out-board storage devices.

Organizer & Chairman:
Stephen Ohr, Western Bureau Editor, Electronic Design Magazine, Sunnyvale, CA

17/1 Software Logic Replacement
James F. Ready, Vice President, Hunter & Ready, Inc., Palo Alto, CA

17/2 Software and Hardware Integration Leads to Compact Systems: CP/M-86 and IRMX-86 on Silicon
Carl Buck, Product Marketing, Microprocessor Operation, Intel Corporation, Santa Clara, CA

17/3 A P-Code Interpreter for the 1804
Andrew A. Modla and C. Michael Caterina, Product Marketing, RCA, Solid State Div., Somerville, NJ

17/4 The R65F11 Forth Microcomputer
William C. Mavity, Rockwell International Corp., Electronic Devices Div., Newport Beach, CA

17/5 Silicon Software Supports Many Users
W. Wade Wyatt, Product Marketing and James J. Farrell III, Manager, Technical Communications, Motorola Inc., MOS Integrated Circuits Group, Austin, TX

THURSDAY, November 10
3:30 to 5:30 P.M.

18 Graphics Display Memory

The objective of this Session is to introduce to the graphics system designer new concepts in MOS Dynamic RAM architectures and to discuss the merits and applications of these architectures. Included in this Session will be an actual product description of a system using one of these new architectures.

Session Organizer:
Raymond Pinkham, Video Memory Design Manager, Texas Instruments, Stafford, TX

Session Chairman:
Satish Gupta, Research Engineer, Computer Sciences, I.B.M. Corp., Yorktown Heights, NY

18/1 CMOS DRAM's Improve Graphics Bandwidth
Bill Righter, Applications Engineer, Intel Corp., Santa Clara, CA

18/2 Memories in Graphics - Present and Future
Ron Sartore, Applications Engineer, INMOS Corp., Colorado Springs, CO

18/3 Memory Architecture Comparisons
Satish Gupta, Research Engineer, Computer Sciences, I.B.M. Corp., Yorktown Heights, NY

18/4 Dual Port Memory With High Speed Serial Access
Ray Pinkham, Video Memory Design Manager, Texas Instruments Incorporated, Stafford, TX

18/5 High Resolution Graphic System
Greg Thompson, Design Engineer, Tektronix, Wilsonville, OR

FRIDAY, November 11
9:00 to 11:00 A.M.

19 System Design with 16/32-Bit Microprocessors

Practical design considerations, rather than just architectural issues, will be discussed by representatives of the major 16/32-bit microprocessor manufacturers.

Organizer and Chairman:
Richard Mateosian, Technical Marketing Manager, NS 16000 Family, National Semiconductor, Santa Clara, CA

***19/1* A Simple Z8000 System**
Shirish Sandesara, Marketing Manager, Zilog, Campbell, CA

***19/2* M68000 Educational Computer Board Design**
James J. Farrell III, Manager, Technical Communications, Motorola, Inc., Austin, TX

***19/3* A 16/32-bit Architecture for Signal Processing**
John W. Hayn, Manager, Digital Signal Processing, Texas Instruments Incorporated, Houston, TX

***19/4* System Design With the NS16000 Family**
Barry Seigel, Applications Manager, National Semiconductor, Santa Clara, CA

***19/5* Designing a High Performance 286 System**
Jayaram Bhat, 286 Product Marketing Manager, Intel, Santa Clara, CA

***19/6* Multiprocessor Systems Using the Transputer**
Peter Cavill, Director, Microcomputer Products Div., Inmos Ltd., Bristol, U.K.

FRIDAY, November 11
9:00 to 11:00 A.M.

20 Desktop and Personal Computers

Desktop and personal computers continue to change rapidly in their performance and cost. This Session will treat the questions of IBM compatible, single user and multi-user progress.

Organizer and Chairman:
Roger Melen, Vice President, Cromemco, Inc., Mountain View, CA

***20/1* Riding the IBM Wave**
Charles Grant, President, Northstar Computers, San Leandro, CA

***20/2* The Executive I: An Advanced Portable Desktop Computer**
Lee Felsenstein, Research Fellow, Osbourne Computer, Hayward, CA

***20/3* An IEEE-696 Bus Xenix-Based Virtual-Memory Desktop Computer**
Steve Gross, Design Engineer, Cromemco, Inc., Mountain View, CA

FRIDAY, November 11
12:30 to 2:30 P.M.

21 Real Time Fail-Safe and Fault Tolerant Mini/Micro Computer

This Session will describe the use of fail safe and fault tolerant mini/micro computer for real time use. The two (2) manufacturers and two systems houses in this field will be represented. The Session will describe the features of the existing equipment, the benefits and typical applications.

Organizer and Chairman:
Gary A. Kravetz, Vice President of Engineering, Fail-Safe Technology Corporation, Los Angeles, CA

***21/1* Design Considerations for Achieving a Fault Tolerant System**
Dr. Michael Sievers, Senior Scientist, Fail-Safe Technology Corporation, Los Angeles, CA

***21/2* New Architecture for Fault Tolerant Systems**
Peter S. Kastner, Manager of Marketing Development, Stratus Computer, Natick, MA

***21/3* Applications of Fault Tolerance of Industrial Control**
John Wensley, Chairman of the Board, August Systems, Salem, OR

***21/4* Micro Based Fault Tolerant Architecture**
Anthony Cantasano, President, No Halt Computers, Farmingdale, NY

FRIDAY, November 11
12:30 to 2:30 P.M.

22 Advanced Personal Computers and Their Processors

Fast moving technology in both Integrated Circuits and very small computers have lead the way to today's Personal Computer revolution. This Session will examine the P.C. revolutions from both the chip and mainframe point of view.

Organizer and Chairman:
James J. Farrell III, Manager, Technical Communications, Motorola, Inc., Austin, TX

***22/1* Microprocessors for a Broad Family of Personal Computers**
Steven W. Leininger, Director of Product Planning, Tandy Corporation, Fort Worth TX

***22/2* Cost Effective 16/32-Bit Solution**
Jeff Nutt, Manager of Product Planning, Motorola, Inc., Austin, TX

***22/3* The Future of Personal Computers**
John Holmberg, Product Manager, Apple, Inc., Cupertino, CA

***22/4* High Level Computation for Personal Computers**
Richard Mateosian, NS16000 Family Technical Marketing Manager, National Semiconductor, Santa Clara, CA

FRIDAY, November 11
3:30 to 5:30 P.M.

23 The MPU Product Path: 8-Bit, 16-Bit, 32-Bit

Today's products must provide upward migration from 8-bit MPU's to 32-bit MPU's through software compatibility. Here we will discuss some problems (both hardware and software) and solutions for planning future products while maintaining compatibility.

Organizer and Chairman:
Jeff Nutt, Technical Marketing Manager, Motorola, Austin, TX

***23/1* Compatible Microprocessor Systems 16 Bits to 32 Bits**
Ron Bell, Professional Staff Engineer, Sperry Unival, Salt Lake City, UT

***23/2* 8/16/32 Bit Compatible MPU's Offer Product Breadth**
Tom Starnes, Product Planning Engineer, Motorola, Austin, TX

***23/3* Software Compatibility Is A Must**
Dan O'Dowd, Software Manager, Green Hills Software, Pasadena, CA

***23/4* 8/16/32 Bit MPU Requirements For Managing Energy & Facilities**
Bob Papp, President, Advanced Automation, Marietta, GA

FRIDAY, November 11
3:30 to 5:30 P.M.

24 Distributed Networking With Personal Computers And Terminals

Distributed Networking with Personal Computers and Terminals is designed to convey practical knowledge and examples of distributed networking in the business environment. This Session will give end users the information they need to extend the life and expand capabilities of currently owned equipment and to add new equipment to their system.

Session Organizer:
Laurie Kalnin, Director of Marketing, Advanced Systems Concepts, Inc., Pasadena, CA

Session Chairman:
Wes Ferris, Director of Sales, Advanced Systems Concepts, Inc., Pasadena, CA

***24/1* Peripheral Networks for the Small Business Office**
Dr. Eric MacCalla, President, Advanced Systems Concepts, Inc., Pasadena, CA

***24/2* Making the Link with Micros and Distributed Networks**
Dr. Robert A. Radamacher, Chairman of the Dept. of Computer Information Systems, Colorado State University, Ft. Collins, CO

***24/3* Electronic Mail**
Kim Maxwell, Vice President, New Product Development, Racal-Vadic, Sunnyvale, CA

***24/4* Networked P.C.'s; Ether-Series Case Studies**
Larry Hartage, Marketing Manager, 3 Com Inc., Mountain View, CA

DEADLINE CLOSING FOR AEROSPACE CONFERENCE IN VAIL, COLORADO

The deadline for paper submittals is closing in! Summaries of papers must be submitted immediately.

Papers are being solicited for the 1984 Aerospace Applications Conference to be held at Vail, Colorado from January 28 to February 4 of next year. This conference is sponsored by the South Bay Harbor Section of IEEE. This will be the fifth annual winter conference on selected topics of specific interest to the section.

This call for papers has been issued for original work on all phases of aerospace applications including systems analysis, digital processing, microwave techniques, and automated testing. The deadline for submission of paper summaries is early in October.

Because of the early deadline, authors are urged to plan immediately to begin preparation of original manuscripts for possible inclusion in the technical program. Authors must submit two copies of a 300-500 word summary which will be used to select papers for the conference. The summary must describe clearly what new and significant results, theoretical or experimental, have been obtained. Summaries must be prepared in single side, single spaced typewritten form, with author's name, affiliation, address and phone on the first page.

Further information may be obtained from the technical program chairman, Leo A. Mallette, Hughes Aircraft Company, Mail Station S1/D309, P.O. Box 92919, Los Angeles 90009.

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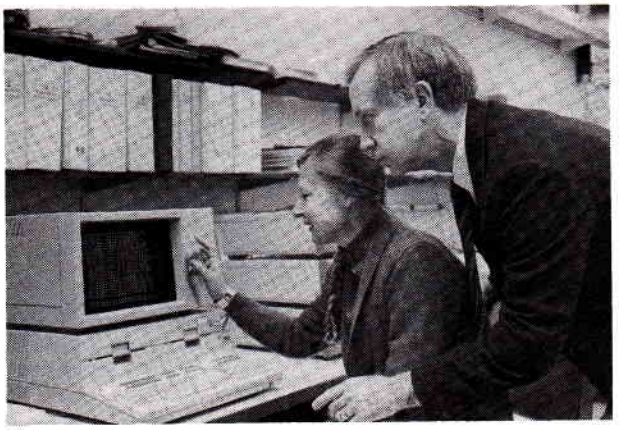
ASK: A COMPUTER COMMUNICATIONS BREAKTHROUGH



Dr. Bozena Thompson and Dr. Frederick Thompson putting ASK (A Simple Knowledge System) through its paces.

After more than a decade-long research effort, Dr. Bozena Thompson and Dr. Frederick Thompson of the California Institute of Technology have achieved a practical, dramatic computer language breakthrough.

First, research on machine translation of a foreign to English language stimulated a rapid advance in theoretical and computational linguistics. Then the question of whether a computer could respond to a user's English queries within an acceptable time arose. The Thompsons set out to prove that it could be done.

Experimenting with real life tasks and over 100 subjects revealed new insights into the basics of person-to-person and person-to-machine communications and changed sharply the direction of their research and ultimately has resulted in the second generation of ASK—*A Simple Knowledge System.*

The system runs on a desktop computer and the Thompsons are working on contract with Hewlett Packard on the first commercial release.

Dr. Frederick Thompson is a Professor of Computer Science and Dr. Bozena Thompson is a Senior Research Associate in Linguistics at the California Institute of Technology. They will be speaking at the Thursday, October 20 meeting of the Santa Monica Bay Section of the IEEE. The meeting will be held at Loyola Marymount University in Westchester (about 3 miles north of the Los Angeles Airport) beginning at 7:30 in room 22 of Peirrea Hall. For more information call Gary Evans or Pauline Phaneuf at (213) 535-2500.

CIVIL DEFENSE THE SURVIVAL IMPERATIVE

by Nancy Deale Greene

Ms. Greene, a strategic analyst of U.S.-Soviet relations and force structure assymetries, will discuss the myth that U.S. defensive measures are a destabilizing influence in today's turbulent world. She will delineate the assymetry of U.S.-Soviet strategic defenses caused by the extensive build-up of Soviet civil defenses. The Soviet Civil Defense program will be discussed. Ms. Greene will also discuss what is necessary for our nation to survive, and recover from, a thermonuclear war.

Ms. Greene is a member of the Board of Directors of the American Civil Defense Association and is President of the Southern California chapter. She is President and founder of the Woman's Institute of International Relations, Chairman of the Board and Treasurer of Independent Research and Information Systems (IRIS), publishers of *Humint.*

Ms. Greene is a consultant to Northrop Corporation, the Institute for Federal Studies, Jaycor, Inc.

The October 18, 1983 meeting of the Nuclear and Plasma Sciences Society will be at the Holiday Inn—LAX, 9901 La Cienega Blvd., L.A. The social hour is at 6:00 P.M., dinner at 7:00 P.M., and the presentation at 8:00 P.M.

For reservations call Ev King at (213) 418-5266 or Stan Stewart at (213) 418-6447.

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Printed Wiring Board Engineers

Requires knowledge of latest developments in PWB technology. Must have well rounded PWB manufacturing experience and be familiar with imaging, lamination, plating, drilling, etching, quality control, etc. for technical interfacing with vendors. Will be involved with design interface, vendor qualification, assembly problem resolution and development of materials and process specifications, finish specifications, engineering drawing review, materials review board and failure analyses activities. Must have degree and experience in building sophisticated systems. Will utilize extensive newly equipped laboratory support.

Active Device Component Engineers

Working with latest state-of-the-art components (LSI, VLSI), will select components commensurate with program requirements and counsel circuit designers on the proper use, application and derating of these components. Will serve as focal point for all component related tasks in support of other functional organizations and supplier activities, and direct and perform failure analysis on devices. Requires a BSEE with a minimum of 5 years experience; knowledge of radiation effects on semiconductors or process/circuit modeling techniques desirable.

Hybrid Circuit and Systems Engineers

Must have analog circuit design/analysis experience. Will isolate/correct problems of a non-optimal design. Must have investigative skills. BSEE required.

Passive Device Component Engineers

Will work with components including types of resistors, capacitors, filters, crystals and connectors. Will perform analytical tasks utilizing the Reliability Laboratory and computer modeling and provide the technical interface between Design Engineering and the parts suppliers, including the establishment and maintenance of process baseline controls. Openings at all levels of experience, including manufacture and/or design engineering backgrounds. A BSEE or BS Physics degree required.

Metallurgical Engineers

Expanding metallurgy/materials group needs experienced Metallurgical Engineer to interface with engineering design, manufacturing and various casting, forging, welding, metal forming and heat treating vendors. Should be familiar with aluminum investment casting, welding, brazing and soldering technologies. Responsibilities include initiation of materials and process specification and related documents, participation in materials review board and failure analyses. Will have opportunity to conduct metallurgical research and development for device performance improvement, with extensive, well equipped metallurgical/analytical laboratory support. Should have a BS in Metallurgy/Metallurgical Engineering with advanced degrees in Metallurgy/Metallurgical Engineering/Materials Science preferred.

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VIEWPOINT—ELECTION '83

Candidates for President—Elect Speak Out on Industry and Institute Concerns

The IEEE national elections are upon us once again. In order for our members to make an informed, intelligent decision on who will fill the highest post of our organization, questions were posed to the candidates. These questions and their responses are published below for your thought and consideration.

Our thanks to the San Francisco Council of IEEE for such diligent and excellent work in posing thoughtful questions and persevering in gathering of these answers. This article originally appeared in the August 1983 GRID.

Each question listed is followed by the three candidates' answers. Their responses appear in the alphabetical order of their names, with each name abbreviated to its first initial. Respondees are Hans Cherney of Falls Church, Virginia, Jerrier A. Haddad of Briarcliff Manor, New York, and Donald King, also of Briarcliff Manor, New York.

Q. *The SCVS has taken the stand that there is no "engineering shortage", only a shortage of technical (technician), clerical and capital support for existing engineers. What is your position on this issue?*

C. I fully agree that there is no engineering shortage. There may be temporary shortages because of new technologies or in specific geographical areas but these are all solved if the right working conditions (salary, benefits and moving allowances) are offered. By reducing overhead, i.e., eliminating clerical and other supporting positions, engineers are forced to spend considerable time on clerical activities. This and using engineers as technicians creates the underutilization of engineers.

H. Indications are that compensation for electrical engineers in the aggregate while rising in the absolute have decreased slightly in real dollar value. In a free market economy, this would not indicate a "shortage." There may be spot shortages for some very narrow specialties. Also, there may be geographical localities where either surplus or shortage may exist due to local industry business conditions. No shortage or surplus can last very long in a free market economy. It is a temporary phenomenon given a reasonable GNP activity.

K. A need for more engineers is proclaimed by government and industry surveys, yet there are engineers out of work, or marginally utilized. High salaries from industry lure engineering students and faculty from universities, but other engineers make no more than workers in trades requiring far less training. Such lack of equilibrium should not surprise us. Changes in technology and economics cannot be accomodated in a free market without periods of adjustment.

What can we do about it? First, there are some obvious remedies for both extremes. For employers, pay what the job demands, and retrain some of your present staff; for engineers, get up-to-date in critical specialties and consider moving where there are job openings. That is easier said than done, and there is much hardship in coping with the situation.

For the IEEE, the imbalance in the utilization of our engineers and engineering schools presents a challenge. We must make a continuing effort to have the facts fairly presented, so wrong actions are not taken. This has been done well by USAB, and should be continued. The IEEE also provides useful data from its salary surveys, and offers educational programs for engineers. I strongly support these IEEE actions.

Q. *How is the title "Engineer" defined? Who should grant the title, "Engineer"? What should IEEE do?*

C. There is no precise definition of the title "Engineer" in the U.S. However, I think that an Electrical Engineer is one who has graduated from an accredited school of engineering which uses guidelines prepared by the IEEE or has demonstrated equivalent qualifications. The title "Engineer" should be granted by the educational institution which uses curriculum standards prepared by the IEEE and is continuously evaluated by the IEEE. The IEEE should strictly enforce its responsibility in this area.

H. The title "Engineer" is defined variously by different groups depending on their purpose. ABET, NSF, Bureau of Labor Statistics, State Licensing Commissions, various companies, all have different definitions, each suited to answer a particular problem.

Also complicating the situation is the effect of changing technology. Specialties of technical professional careers now include types of engineering not in existence only a few years ago. Examples range from Human Factors Engineer to Software Engineer.

I believe that only government should be allowed to restrict use of the title, and then only to assure the general public that an engineer is not a charlatan or a fraud. In all other cases, credentials such as education and work experience and technical publications can be interpreted by peers.

K. The title "Engineer" in the U.S. is not precisely defined. Our lack of definition for the title corresponds to the breadth of competence required of engineers in different jobs. Where the public safety is involved, state licensing of professional engineers is essential to assure a minimum standard. Private employers may impose different criteria. I have always been in private employment, but am proud to have the title P.E.

The IEEE should be instrumental in setting high professional standards; however, our accreditation activities should be devoted to institutions and programs, not to individuals.

Q. *What should be done about Engineering Colleges? Low faculty salaries, aging lab equipment and the quality of the education itself, have become issues. What should the IEEE do to assist engineering colleges without creating a glut of new engineers?*

C. The ideal solution in improving our Engineering Schools would be to create Professional Schools of Engineering. This would make the engineering school somewhat independent of the university to which it belongs and therefore salaries paid to its faculty would not be governed by the salary scale of the university. That is why medical and law schools can attract outstanding faculty members. In the meantime, until professional schools become feasible, salaries of entry level positions should be raised so that they become competitive with industry offers to attract outstanding talent.

H. Indeed, engineering colleges are in difficulty with declining quality due to lack of sufficient faculty and aging laboratory equipment and buildings. College administrators themselves must take responsibility of making an academic career attractive once more. They must make academic salaries

more competitive with industrial salaries and raise the stipends for graduate students. No one else can do this—it is an internal problem.

Aging and obsolete laboratory equipment is a much different issue. New approaches are needed such as different relationships with industry and more creative use of co-op programs.

IEEE can and should create mechanisms to facilitate practicing engineers becoming part of the education process. Engineering is the only profession where this does not happen. I believe it will have a salutory effect on the practicing profession as well as the education system.

K. Through its accreditation activities, the IEEE should push for high standards in engineering education. This limits the number of graduates, and prevents a glut of poorly qualified people from entering the profession.

In addition to using modern methods and up-to-date equipment, an engineering curriculum must fit students for their future work. There is a need here for closer communication between educators and industry. Industry can provide information on training needed for current job requirements, as well as participation in cooperative programs. When there is a sucessful cooperation with industry, its financial support become more accessible. The IEEE, with both academic and industrial membership, can be a positive factor in bringing this about.

Q. *Engineering layoffs are devastating to our profession. What can be done to improve engineering employment stability?*

C. The ups and downs of engineering employment are a result of government fiscal policy and budget allocations. Engineers constitute an important resource for the U.S. Even in times of recession, engineers should be employed to design and develop products to be manufactured when the upswing occurs. I think we should influence the government to see to it that engineers are employed and utilized during recession periods, so that they do not have to leave the profession.

H. Layoffs are a price we pay for living in a free market society. There are many protections against disaster, beginning with unemployment insurance. Layoffs are never pleasant and are a deep trauma to those affected. However, I see no way to improve engineering employment stability without shaking the foundation of our economic system. The only approach that seems to offer promise also has a cost associated with it. That approach is to significantly improve the unemployment payments through further payroll deductions.

K. Engineers with superior qualifications are least likely to be laid off. For this, continuing education is the key. Through effective training in a new discipline, an experienced engineer can do a better job than a recent graduate in that discipline. This option is too often neglected by employers.

The IEEE, through EAB, has made an excellent start in continuing education. Industry is the key factor, since it has the need for up-to-date engineering and the ability to plan for effective and stimulating training programs, both internal and outside. To provide a strong incentive for a broadbased national program, I have proposed an education and retraining tax credit for industry.

Q. *Age discrimination affects a great many of our members. What should the IEEE do?*

C. Age discrimination is illegal, yet engineers are very much affected by it. It is a subject that the IEEE should address by assisting its members in their actions against this practice. We should advise our members of their rights and assist them in analyzing the viability of their cases if they so desire. We also should continue to expose illegal practices whether they be in advertising, hiring, promotion, forced retirement, salary or any other area.

H. Age discrimination is motivated by competitive pressure within the profession, and by loss of enthusiasm and dedication of the individual with time. My experience would indicate that the so-called technical obsolescence issue is no more than this.

The IEEE does a great deal to offer its members avenues to prevent this from happening. Our technical and educational programs keep thousands of us competitive over the years if we choose to avail ourselves of the opportunities. No matter how good our program, improvement should always be sought. I would be interested in an effort that would seek to improve the IEEE's methods and programs to keep our members competitive.

K. I believe there are two remedies to this unfair practice: 1) continuing education, to keep the aging engineer up-to-date, and 2) unrelenting publicity for persistent offending employers. I shall support both vigorously.

Q. *Engineering wages have become a real concern. The average Bay Area engineer with 10 years' experience earns about $16 per hour. Trades-people earn a substantial amount during their apprenticeships, then start at $15.45 per hour as auto mechanics, $23.30 per hour as electricians or $24.40 per hour as plumbers and steamfitters, at the same time an engineer starts work after college. Please comment.*

C. Engineering salaries are a reflection of (a) the supply of engineers and (b) the standing of the engineering profession. While trades people control the entry into their occupations and also benefit from state and local laws, i.e., a licensed electrician is required to wire or approve the wiring of a building, engineers in industry do not benefit from these laws. Also, colleges continue to advertise the "high" starting salaries of engineers (which in real dollars have not gone up in years). This attracts an ever increasing number of students to the profession. Although engineers consider themselves professionals, their salaries are determined by their employers. Only if they are self-employed as consultants do they set their fee.

H. Craftsmen and trade people are generally hourly wage earners. While hourly rates are high, income over the year may be much less than one would anticipate. On the other hand, I have already indicated that engineering compensation is, in fact, comparitively low. This prompts many to opt for making the IEEE into a guild or a union. If electrical engineers feel that a guild or union is necessary (and it may be so) then I think one should be organized. I strongly object to the IEEE taking on this role. We are first and foremost dedicated to uplifting the profession through technical and educational activities.

K. Comparisons of starting wages for tradespeople and engineers can be a cause for concern. Over the long term, wages received should be proportional to the value of the services rendered, even though economic conditions may cause severe distortions. The goal of IEEE must be to help raise the level of performance of engineers. This can be accomplished in several ways:

a) Through accreditation, we can work toward higher standards for

Continued on Page 30

MAGNETOMETER DESIGN AND USE

The first magnetometer was developed by K.F. Gauss in 1832 for measuring the horizontal component of the earth's magnetic field. It was a permanent bar magnet suspended from a thin gold fiber. The SQUID, super conducting quantum interference device, was discovered 130 years later and found to have use as an extremely sensitive magnetometer. The SQUID is based on the Josephson Junction. Magnetometers currently in use extend over the range of both devices. The Staff of Magnetic Design Consultants will discuss the design and use of Magnetometers from the MAD, Magnetic Anolamy Detector, used in submarine hunting and geophysical mapping to magnetic testing in the physical and physiological laboratory.

The discussion will take place Wednesday, 19 October 1983, 8:00 p.m. at #14 Steele Hall, Bldg. 61, California Institute of Technology, Chester St., Pasadena, CA. Park south on Chester from Del Mar St.

Dinner at 6:00 p.m. at ONE WEST RESTAURANT, One West California St., ("hidden" at the corner of California & Fair Oaks) Pasadena. Menu prices from $6.95. Reservations: Phil Massie (213) 839-6498 or Art Grinnell (213) 988-2600 extension 6949, by Thursday noon, 18 October 1983.

THE ROBOT REVOLUTION
from Page 7

addition to Oxnard Air Force Base.

A native of Tucson, Arizona, Cruz earned a BA in history and Master's in Latin studies from the University of Southern California. He is currently working toward his PhD at USC in history and language. He is a member of several honor societies.

Mr. Cruz's presentation will start sharply at 12:00 noon on Wednesday, October 26, at the Southern California Edison building headquarters, Multipurpose Room, 2244 Walnut Grove in Rosemead. Luncheon will be available at the cafeteria adjacent to the meeting room.

For reservations please call Doretta Morena at (213) 572-4113 or Nora Higgason at (213) 921-4069

CAREER OPPORTUNITIES

The Aerospace Corporation has immediate openings for individuals with a degree in electrical engineering or physics and background in one of the areas listed:

ANTENNA DEVELOPMENT

Design, analysis, and measurement of advanced antenna concepts for space and ground applications. Demonstrated background with state of the art computer codes. Familiarity with adaptive processing technology. System level appreciation of antenna design impacts and evaluation of projected system performance.

COMMUNICATIONS SYSTEM ANALYSIS

Statistical communication theory, modulation, coding, filtering and propagation effects; spread spectrum technology. Satellite laser communications.

COMMUNICATION SYSTEM ARCHITECTURE

Satellite communication technology. Communication satellite system trade studies; SHF, EHF, and laser links, military terrestrial communication system synthesis.

MICROWAVE SYSTEMS TECHNOLOGY

Design and test of microwave components including solid state components for space applications; hardware design and development of low noise receivers, power amplifiers and antennas. TWT amplifier and TWT power supply design, development, test in satellite applications.

RADAR SYSTEMS

Design and analysis of radar system for space and ground applications. Theoretical and hardware aspects of receivers, transmitters and signal processing; ECCM techniques and clutter suppression techniques.

TT&C SYSTEMS

Engineering analysis and design of TT&C systems including COMSEC equipment. Digital and analog circuit design for spaceborne telemetry, data transmission, modulation/demodulation techniques, telemetry data processing. ECCM, test and flight operations related to TT&C systems. Spaceborne tape recorders technology. AFSCF experience desired.

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INDUSTRY APPLICATIONS OFFICERS

Industry Applications, S-34, has reported the results of their 1983-84 election. Their new officers are as follows:

Chairman
Ronald Tadman
Vice Chairman
Neil Nichols
Secretary
Gary Swanson
Treasurer
John Kocker
Publicity Chairman
Bob Carson
Membership & Transfer
Ralph Hendricks
Program Chairman
Norbert Schneider
Member-at-Large
Reuben E. Hall

WANTED TO BUY

Old science fiction magazines and pulp magazines from 1930's to 1950's. Good prices. What do you have? Jim Pearson (213) 647-1948 (day) or (714) 821-4893 (evening).

from Page 28

engineering professionals, and for supporting technologists.

b) Through effective continuing education, we can improve the capabilities of working engineers.

c) Through our publications and the directed efforts of USAB, we can increase the standing of our profession in Congress and in the public eye.

Fact-finding is a real service, but I do not believe the IEEE can or should be party to the determination of local wage rates.

Q. *Recently there has been considerable discussion about what constitutes appropriate representation of members, considering that IEEE is a matrix organization. How do you view the present organization and its ability to fairly address all member interests? What, if any, changes would you recommend?*

C. I think the IEEE is a three dimensional matrix organization: Professional, Geographical and Technical. The professional dimension concerns itself with the improvement of the work environment of the members and the engineer's responsibility toward society. The geographical dimension is concerned with the service to the members, the administration of the worldwide organization through communications with Members, Chapters, Sections, Student Branches and Regions. The technical dimension concerns itself with products, such as publications, conferences, and educational programs. I think that we should strive to have all three dimensions represented on the Board of Directors. All three are of equal importance. Perhaps it would be advisable to have the three Boards work separately and independently, while the Board of Directors would make policy decisions. I think the present Board of Directors is too large to function efficiently. I would suggest a Board of Directors consisting of 11 members, President, President-Elect, Past President, Treasurer, Secretary and two representatives of each of the three boards: USAB, RAB, and TAB. We could eliminate the Executive Committee, and give the three boards autonomy regarding their responsibilities. All Board members would be elected by the membership.

H. I believe that our present matrix structure should be allowed to operate for a while before we try to modify it again. My impression is that the IEEE has excellent member representation. If anything, the governance of the Institute has become unwieldy because we are so responsive to minority views.

I deeply believe that the IEEE should not take sides where members' interests are badly divided or where matter of conscience are involved. I believe every electrical engineer should belong to the Institute in order to support the profession and in order to stay technically proficient and help others to do so. Anything which tends to discourage our fellow electrical engineers from being Institute members should be avoided. We must take care that the Institute does not become all things to all people and thus lose its primary reason for existence.

K. The IEEE organization has evolved in response to the needs of the membership. With increasing size and complexity, more autonomy in the various elements is desirable. The section offers great opportunities for interdisciplinary contacts and for specialist chapter meetings. RAB must keep alert to local needs, and should fairly represent the membership. Like congressional districts, our regions may need occasional reapportionment. Our technical societies provide vital content to the Institute through their publications and conventions. Ours is not a static technology, nor should society representation on TAB and the Board of Directors be so.

The growth of the USAB activities has been the most rapid. Its four councils respond to real member needs, and have a great record of accomplishment. However, the proper identification of USAB tasks poses problems. Jack Doyle, Vice President, has made an excellent statement on the role of USAB: "It has been my feeling that IEEE should take positions only on issues which are unique in some way to our members or at least to electrical engineers." I agree with him wholeheartedly.

In summary, I believe the IEEE organization should adjust to changes in the geographical distribution, technical emphasis, and professional needs of the membership.

Deadline For
Editorial Material
First of Each Month

RELIABILITY MINI-COURSE

The Los Angeles Chapters of the IEEE Computer and Reliability Societies are presenting a three day course on Hardware/Software Reliability December 1-3, 1983 (Thursday-Saturday). The location is at 300 N. Sepulveda Blvd., which is the TRW Training Facility, Bldg. 110, on the corner of Sepulveda Blvd. and Grand Avenue (one block north of El Segundo Blvd.). The closest accomodations are at the Hacienda Hotel, which is just across Sepulveda Blvd., one block north of the TRW Training Facility and only a few minutes by free van pickup from LA International Airport. Instructors are listed below.*

The first day's presentation, on the subject of hardware reliability, will include current techniques of electronic reliability prediction using MIL-HDBK-217D, including proposed usage factors based upon user experience. Also included will be a wide-ranging discussion on methods of reliability modeling from the practicing engineer's viewpoint. Other topics are reliability allocations, operations research model applications, Monte Carlo simulation, availability and incentive modeling, all at an intermediate to advanced level.

The software reliability material covers advances made in software reliability prediction and measurement techniques, as well as on applications of computer program complexity theories. The two day presentation will also cover hardware and software relationships and analogies used in determining system reliability, with definitions of software/hardware reliability, availability and maintainability terms, the methods and value of simulation in evaluating impact of software and firmware on system design, and use of fault tolerance for on-board computers requiring very high reliability.

Software Quality Assurance will be the final topic, covering software quality requirements, planning in terms of MIL-S-52779 and MIL-STD-1679, and making the software development visible and auditable via the Unit Development Folder.

The three-day course will include a continental breakfast, beverages, and catered luncheon each day. The course material consists of the course presentation figures; a text: *Reliability:*

Continued on Page 32

GLOBECOM '83

Town & Country Hotel
San Diego, California
November 28 — December 1, 1983

SAN DIEGO

CONFERENCE HIGHLIGHTS

- **WELCOME and EXHIBITORS RECEPTION on November 28th.**
- **PLENARY SESSION**.....Dr. John F. Clark, Senior Technical Advisor on the US RARC 83 Delegation
  Dr. Carol Lee Hilewick, Executive Director of the US Council for World Communications Year
- **CONFERENCE BANQUET PROGRAM**.....Computer Generated Art and Music
- **AWARDS LUNCHEON**.....Dr. Robert M. Fano on "Preventative Maintenance for Engineers"

IEEE

ICC GLOBECOM

COORDINATED CONFERENCE SESSION ON TWO HIGH INTEREST TOPICS

TOPIC AREA	TUTORIAL	SPECIAL PAPERS	PANELS
Encryption	*Instructor:* W. Diffie, Manager Secure Systems Research, BNR, Inc.	*Chairman/Organizer:* Dr. S.T. Walker, Pres. TIS, Inc. "Telecommunications Security"	*Moderator:* Dr. John Hershey, BDM "Information Privacy"
Interactive Communications and TV	*Instructors:* Dr. T. Baldwin, Michigan State University and D.S. McVoy, Pres. BroadBand-Technologies, Inc.	*Chairman:* Dr. I. Rubin, UCLA *Organizer:* Dr. M. Davidov, Oak Industries	*Moderator:* M. Radwin GTE Telenet

TOPICS AND TECHNICAL SESSIONS

Communication Software
- Design Tools and Methods for Telecommunication Systems
- Performance Modelling Issues in Distributed Switching
- Support Services for Data Networks

Communications Systems Discipline
- Spectrum Management and Orbital Efficiency
- Adaptive Arrays and Cancellers
- Spread Spectrum System Performance
- Computer Aided Modelling, Simulation, Design and Analysis of Communication Systems

Communication Theory
- Optical Communication Theory
- Modulation and Coding Techniques
- Integrated Voice and Data Systems: Theory and Concepts
- Satellite Data Communication
- Modulation and Synchronization

Computer Communications
- Telecommunications Needs: The Users View
- Convergence of Integrated Services and Local Area Networks
- Distributed Protocols
- Net 1000 Applications
- Mathematical Models of Multiple Access Protocols
- Performance Evaluation of Computer Networks

Communication Switching
- Packet Switched Networks for Voice and Data Communications
- Evolution Plans/Perspectives for Local Digital Switchers
- Switching Systems

Data Communications System
- Data Network Performance - Search for Better Quality of Service
- Document Distribution Systems

Information Theory
- Image Processing <Joint with Communication Theory Committee>

Signal Processing and Communication Electronics
- Speech Processing for Communications - I
- Communication over Distribution Power Lines
- Speech Processing for Communications - II
- Error Control in Communications Systems
- Mobile Radio Systems <Joint with Radio Communication Committee>
- High Performance Digital Signal Processor and its Application to Communication Systems

Optical Communications
- Network Evolution of Lightwave Systems
- Coherent Optical Fiber Systems
- Installation Connection and Splicing of Optical Fiber Cable and Systems

Radio Communication
- Baseband Equalization Techniques in Digital Radio Systems
- High Capacity Digital Radio - Relay System In Europe
- Radio Characterizations, Field Problems and Solutions
- Mobile Radio System <Joint with Signal Processing and Communication Electronics Committee>

Satellite and Space Communication
- New Rural Applications of Satellite Communications
- Selected Topics on Satellite Communications
- Digital Electronic Message Services
- Modulation and Coding Technique for Satellite Communications
- Satellite Networks
- Advances in Satellite Antenna Technology

Standards Coordination & Liaison
- Standards on Telecommunication Network Transmission Performance

Technical Program Committee
- Interactive Communications and TV
- Telecommunication Security

Transmission Systems
- Digital Techniques and Systems for Teleconferencing
- Digital Transmission
- Echo Cancellers

FOR REGISTRATION INFORMATION CONTACT:

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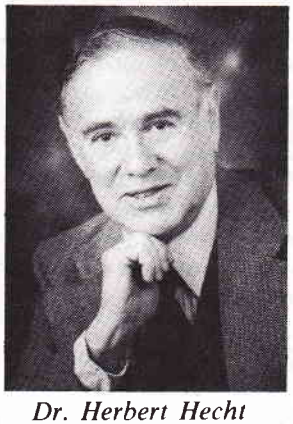
(619) 451-4901

HAPPY 75TH, LAC!

The Power Engineering Society held its Summer General Meeting at the Bonaventure Hotel, July 17 through July 22. At the Sunday Reception we celebrated the 75th birthday of the "Los Angeles Section". The celebration was complete with birthday cake. In attendance were Lional Barthold, President, IEEE PES, and James B. Owens, President, IEEE.

COMPUTER STANDARDS

Joint Meeting Announcement - L.A. Chapters IEEE Computer Society, Reliability Society and ACM on Computer Standards at Hacienda Hotel on October 27, 1983 (Thursday).



Dr. Herbert Hecht

Some standards are so essential to the functioning of society that they are adopted through legislation (e.g., weights and measures); others are mandated by Government agencies such as the Department of Defense. But in the computer field the majority of standards are adopted through a voluntary process in which Government does not take an explicit part. All voluntary standards efforts in the U.S. are coordinated by the American National Standards Institute. The IEEE is accredited by ANSI, and computer standards developed by the IEEE Computer Society can become American National Standards by virtue of this accreditation.

The speaker, Dr. Herbert Hecht, will explain the standards development and approval process within the Computer Society and the IEEE, describe the mechanisms for coordination with other societies and trade organizations, and highlight the unique attributes of the IEEE standards procedures. Examples of recently approved IEEE computer standards will be presented: microcomputer buses, local area networks, and software test documentation. All the steps necessary for starting a new standard will be described. If you have been wondering if there is, or why there isn't, a standard for....don't miss this one!

Dr. Hecht is President of SoHaR Incorporated, an organization engaged in studies and consulting in computer software and hardware reliability. In prior employment he was Director of Computer Technology in the Advanced Programs Division of the Aerospace Corporation and Department Head for Light Aircraft and Helicopter Flight Controls at the Sperry Flighjt Systems Division. He is currently Chairman of the Computer Standards Committee of the IEEE Computer Society. He is also active in the Computer Society Technical Committees for Software Engineering and Fault Tolerant Computing.

Hecht received a Bachelor of Electrical Engineering degree from City College in New York and a Masters Degree in the same subject from Polytechnic Institute of New York. He obtained a PH.D. in Engineering from UCLA.

In addition to Dr. Hecht's talk, a review of the problems and needs for better standards will be provided by a distinguished panel of computer scientists and engineers.

Reservations are required by 10/23, send $11.50 (includes tax and tip) to L.A. IEEE Computer Society, P.O. Box 1285, Pacific Palisades, CA 90272, noting 10/27 meeting, or call Sam Lehr at 535-2905 for information.

The Hacienda is at 525 N. Sepulveda Boulevard, El Segundo. (Take the San Diego Freeway to Imperial Offramp, then West to Sepulveda and South to the Hacienda.) Cocktails are at 6:00 p.m., dinner at 6:30 p.m., and the presentation at 7:30 p.m.

RELIABILITY MINI-COURSE
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Management, Methods, and proceedings of a seminar, entitled "Improving Availability of Hardware-Software Systems," held in November 1982 under IEEE Reliability and Computer Societies sponsorship. Fees for the hardware reliability course alone, on December 1, and for the two day software reliability course on December 2, 3, 1983, can be quoted by the contact numbers listed below.

Contact Sam Lehr at (213) 535-5603 or send inquiries to LA IEEE Computer Society, P.O. Box 1285, Pacific Palisades, CA 90272.

* Gene Barnett, TRW, System Engrg.

Irv Doshay, TRW & Lecturer at Univ. Calif. courses

Annette Frimzis, Consultant, formerly TRW

Sam Lehr, TRW, Product Assurance (Contact 213/535-5603)

Myron Lipow, TRW, Lecturer at Univ. Calif., Course & Text Author (Contact 213/536-2001)