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*Newsletter*



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**OCEANS '94 OSATES**  
*Final Call for Papers*



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# Highlights from the Technical Activities Board Meeting JUNE 30, 1993

The second meeting of the 1993 Technical Activities Board (TAB) was held on June 30, 1993 at the Caribe Hilton Hotel, San Juan, Puerto Rico. The following actions were taken:

**Society Presidents' Forum Chairman.** The Society Presidents' Forum announced that Dr. Glen N. Williams was elected Chairman of the Society Presidents' Forum for the term 1994.

**TAB Nominations and Appointments Chair.** The TAB Nominations and Appointments Committee announced that Dr. Jan Brown was elected Committee Chair for the term mid-year 1993 to mid-year 1994.

**Society President Representatives to the TAB Nominations and Appointments Committee.** The Society Presidents' Forum announced that Mr. Harold L. Flescher and Dr. Suzanne R. Nagel were elected Society President Representatives to the TAB Nominations and Appointments Committee for the term mid-year 1993 to mid-year 1995.

**Division Director Representatives to the TAB Nominations and Appointments Committee.** The Division Directors' Forum announced that Mr. Frederick T. Andrews and Mr. Robert A. Dent were elected Division Director Representatives to the TAB Nominations and Appointments Committee for the term mid-year 1993 to mid-year 1995.

**New Publications.** As requested by the TAB Periodical Council, TAB approved several proposals for new publications beginning in 1994. They were:

- *IEEE Computational Science and Engineering Magazine* to be published by the IEEE Computer Society
- *IEEE Multimedia Magazine* to be published by the IEEE Computer Society
- *IEEE Robotics and Automation Magazine* to be published by the IEEE Robotics and Automation Society
- *IEEE Personal Communications Magazine* to be published by the IEEE Communications Society

**Declaration of New IEEE Computer Society Magazines as Interdisciplinary Publications.** TAB approved offering the new *IEEE Computational Science and Engineering Magazine* and the new *IEEE Multimedia Magazine* as Interdisciplinary Publications to be made available to members of other IEEE Societies at subscription rates of \$20 each for 1994.

**Declaration of New IEEE Personal Communications Magazine as a General Interest Publication.** TAB approved offering the new *IEEE Personal Communications Magazine* as a General Interest publication to be made available to all IEEE Members at a subscription rate of \$30 for 1994.

**Declaration of IEEE Aerospace and Electronics Systems Magazine as a General Interest Publication.** TAB approved offering the *IEEE Aerospace and Electronics Systems Magazine* as a General Interest Publication to be made available to all IEEE members at a subscription rate of \$30 for 1994.

**Title Change of IEEE Transactions on Electrical Insulation.** As requested by the TAB Periodicals Council, approved a proposal from the IEEE Dielectrics and Insulation Society for a title change of the *IEEE Transactions on Electrical Insulation* to *IEEE Transactions on Dielectrics and Electrical Insulation* beginning in 1994.

**Proposals from IEEE Components, Hybrids, and Manufacturing Technology Society.** As requested by the TAB Periodicals Council, TAB took action on the following items related to the IEEE Components, Hybrids, and Manufacturing Society:

- TAB approved the title change of the *IEEE Transactions on Components, Hybrids, and Manufacturing Technology* to *IEEE Transactions on Components, Packaging and Manufacturing Technology*, beginning in 1994, to appropriately reflect the Society's name change.
- TAB also approved splitting the Transactions into two publications beginning in 1994 titled *IEEE Transactions on Components, Packaging and Manufacturing Technology, Part A* and *IEEE Transactions on Components, Packaging and Manufacturing Technology, Part B: Advanced Packaging*.
- Lastly, TAB approved offering the *IEEE Transactions on Components, Packaging and Manufacturing Technology, Part B: Advanced Packaging* as an Interdisciplinary Publication to be made available to members of other IEEE Societies at a subscription rate of \$15 for 1994.

**Sister Society Relationship Between IEEE Components, Hybrids, and Manufacturing Technology Society and ASME and ASQC.** As requested by the TAB Periodicals Council, approved a proposal to allow the IEEE Components,

Hybrids, and Manufacturing Technology Society to enter into a Sister Society relationship with the American Society of Mechanical Engineers (ASME) and the American Society for Quality Control (ASQC) and offer its publication(s) *IEEE Transactions on Components, Hybrids, and Manufacturing Technology* at a Sister Society subscription rate of no less than 1.5X the member rate to ASME and ASQC.

**Final Approval of Magazine and Newsletters Rates.** TAB approved the 1994 Magazine and Newsletter rates as submitted by the TAB Periodicals Council.

**TAB Public Relations Committee Charter.** As requested by the TAB Liaison Council, TAB approved the TAB Public Relations Committee Charter.

**TAB Electronic Information Dissemination Committee Charter.** As requested by the TAB Products Council, TAB approved a change in the name of the TAB CD-ROM Committee to the TAB Electronic Information Dissemination Committee and approved the TAB Electronic Information Dissemination Committee Charter.

**Institutional Research Office.** As requested by the TAB Products Council, TAB endorsed the concept of creating an Institutional Research Office for recommendation of approval by the IEEE Board of Directors.

**Exclusive Distribution Rights for Non-Members Periodicals in India.** As requested by the TAB Products Council, TAB endorsed in principle a proposal to extend exclusive distribution rights to a vendor for non-member periodicals in India pending review and comment on the contract by interested Society/Council Presidents within two weeks.

**"Proposal for Electronic Delivery of IEEE Publications".** As requested by the TAB Products Council, TAB approved the expenditure of up to \$8,000 from TAB reserves for consultation and staff support to finalize all details of the "Proposal for Electronic Delivery of IEEE Publications" in cooperation with the IEEE Publications Board. The final proposal will be presented to TAB and the IEEE Publications Board for approval during their fall 1993 meetings.

**Proposed New IEEE Policy Statement Regarding Ethics of Submitting Papers and/or Abstracts.** As requested by the TAB Technical Meetings Council, endorsed in principle a new IEEE Policy Statement regarding the ethics of submitting papers and/or abstracts.

**TAB Steering Committee on Design and Manufacturing Engineering Charter.** TAB approved the TAB Steering Committee on Design and Manufacturing Engineering Charter.

**Proposed Revisions to IEEE Bylaws 310.1, 310.4(5) and 310.5 - Technical Activities Board.** TAB endorsed for recommendation of approval by the IEEE Board of Directors modifications to IEEE Bylaws 310.1, 310.4(5) and 310.5 that would change the voting status of TAB and TABAC members,

so that all members of these bodies have the right to vote. The proposed revisions also place the Chairman of the TAB Steering Committee on Design and Manufacturing Engineering (DME) on TAB as a voting member.

**Proposed Revisions to IEEE Bylaw 102.1 - Life Members.** TAB endorsed for recommendation of approval by the IEEE Board of Directors modifications to IEEE Bylaw 102.1 outlining changes in eligibility for IEEE Life Membership.

**Proposed Revisions to IEEE Bylaw 314.10 - Nominations and Elections.** TAB endorsed for recommendation of approval by the IEEE Board of Directors modifications to IEEE Bylaw 314.10 to provide a specific time frame for the collection of signatures for a petition candidate.

**Proposed New IEEE Policy Statement 6.23 - Guidelines for IEEE Newsletters.** As requested by the TAB Periodicals Council, TAB endorsed a new IEEE Policy Statement 6.23 governing guidelines for IEEE Newsletters, including Quality Assurance and Requirements for recommendation of approval by the IEEE Board of Directors.

**Proposed Revisions to IEEE Policy Statement 6.13 - Requirements for Starting New Publications.** As requested by the TAB Periodicals Council, TAB endorsed modifications to IEEE Policy Statement 6.13 outlining the approval process of new publications for recommendation of approval by the IEEE Board of Directors.

**Proposed Revisions to IEEE Policy Statement 6.4 - Publication of Periodicals Outside the Institute.** As requested by the TAB Periodicals Council, endorsed modifications to IEEE Policy Statement 6.4 defining the publication of periodicals outside the Institute for recommendation of approval by the IEEE Board of Directors.

**Proposed New IEEE Metric Policy.** As requested by the TAB Periodicals Council, TAB endorsed the concept of developing an IEEE Metric Policy.

**Proposed Revisions to IEEE Policy Statement 11.4.D - Contributions from Region, Council, Section and Society Funds.** TAB endorsed for recommendation of approval by the IEEE Board of Directors modifications to IEEE Policy Statement 11.4.D to delegate approval authority for contributions under \$5000 offered by Regions, Councils, Sections or Societies to the appropriate Vice President.

**Proposed Revisions to IEEE Policy Statement 3.3 - Recognized Educational Programs.** As requested by the TAB Liaison Council, TAB endorsed modifications to IEEE Policy 3.3 to formalize the maintenance program of the Recognized Educational Programs (REP) list for recommendation of approval by the IEEE Board of Directors.

**1994 Society/Council Membership Fees, Publication Rates and Schedules.** As requested by the TAB Finance Committee, TAB endorsed the 1994 Society/Council mem-

bership fees, publication rates and schedules for recommendation of approval by the IEEE Executive Committee.

**1994 Student Society Fees and Publication Rates.** As requested by the TAB Finance Committee, TAB endorsed the 1994 Student Society fees and publication rates for recommendation of approval by the IEEE Executive Committee.

**1994 Section Library and Student Branch Library Subscription Rates.** As requested by the TAB Finance Committee, TAB endorsed the 1994 Section Library and Student Branch Library subscription rates for recommendation of approval by the IEEE Executive Committee.

**1994 Non Member Subscription Prices.** As requested by the TAB Finance Committee, TAB endorsed the 1994 non member subscription prices, including the All Periodicals Package for recommendation of approval by the IEEE Executive Committee.

**1994 TAB Budget.** As requested by the TAB Finance Committee, TAB approved the 1994 TAB Budget.

**Proper Allocation of Information Services Costs.** TAB requested that the IEEE Executive Committee direct the IEEE Information Services Oversight Committee to develop a set of metrics to determine proper allocation of Information Services costs based on usage/benefits.

**IEEE Electron Devices Society Field of Interest Change.** TAB endorsed the IEEE Electron Devices Society's revised Field of Interest Statement which more accurately describes the Society's scope and recommended its approval by the IEEE Executive Committee.

**TAB Administration Council (TABAC) Meetings.** TAB approved a request that future TABAC meetings not be held unless the Vice President - Technical Activities determines that one or more issues must be handled, in person, between scheduled TAB meetings.

**Society Chapters Coordinators Meeting.** Based on the success of the Society Chapter Coordinators meeting held, the TAB Liaison Council was requested by TAB to organize another one-day Society Chapters Coordinators Meeting with the intent of reaching a broader audience.

**Proposed Revisions to IEEE Policy Statement 11.6 - Travel Funds for Major Boards and Committees.** Due to high travel costs that may be incurred from volunteers outside Regions 1-6, TAB opposed endorsing modifications to IEEE Policy Statement 11.6 governing travel funds for major Boards and Committees.

**Electronic Communication Among Chapters.** As requested by the RAB/TAB Transnational Committee, TAB approved a proposal to increase electronic communication among Chapters, collect information on this activity and encourage Societies to appoint Chapter Coordinators with access to electronic communication. The TAB Secretary will report on the status of these activities during the November, 1993 meeting.

**Society Awards.** TAB approved the following actions regarding awards:

- Revision to IEEE Nuclear Plasma Sciences Society Radiation Effects Award
- Revision to IEEE Vehicular Technology Society Best Paper Award
- Establishment of IEEE Aerospace and Electronics Systems Society Radar Systems Panel Award
- Establishment of IEEE Computer Society Wing Toy Best Student Paper Award
- Establishment of IEEE Computer Society Hans Karlsson Award
- Establishment of IEEE Computer Society Sidney Fernbach Memorial Award
- Establishment of IEEE Electron Devices Society Distinguished Service Award
- Establishment of IEEE Geoscience and Remote Sensing Society Interactive Session Prize Paper Award
- Establishment of IEEE Nuclear and Plasma Sciences Society Plasma Sciences and Applications Award
- Establishment of IEEE Nuclear and Plasma Sciences Society Early Achievement Award
- Establishment of IEEE Signal Processing Society Magazine Award
- Establishment of IEEE Vehicular Technology Society Avant Garde Award
- Establishment of IEEE Vehicular Technology Society Neal Shepherd Memorial Best Propagation Paper Award



# OCEANS 94 OSATES

Ocean engineering for  
today's technology and  
tomorrow's preservation

## FINAL CALL FOR PAPERS



IEEE



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The IEEE Oceanic Engineering Society and the French Société des Electriciens et Electroniciens solicit prospective papers dealing with new technology, concepts, developments and applications that provide a basis for advances in Science and Engineering in the ocean environment.

Locating OCEANS 94 in France, its first venue outside North America, is a major move in the long and successful series of OCEANS annual conferences. It is expected that this will lead to an increase in international cooperation and an expansion of our contributions to long term worldwide ocean monitoring programs.

OCEANS 92 OSATES will offer much to its participants, through a large **Business exhibit**, already a success in the previous 1991 OSATES conference, a **Naval Exhibition** of high technology, ocean research vessels in Brest Harbor, and the **Technical program**, which will include conference and poster sessions along the following topics:

- |  |  |
|--|--|
| 1 - Underwater Acoustics                     | 15 - Signal and Information Processing     |
| 2 - Detection, Classification & Localization | 16 - Modeling, Simulation & Data Bases     |
| 3 - Boundary Effects & Propagation           | 17 - Neural Networks & Fuzzy Systems       |
| 4 - Matched Field Processing/Tomography      | 18 - Knowledge-Based Expert Systems        |
| 5 - Sonar Signal Processing                  | 19 - Geographical Information Systems      |
| 6 - Transducers & Arrays                     | 20 - Non-Acoustic Imaging                  |
| 7 - Ocean Monitoring Systems                 | 21 - Supercomputers                        |
| 8 - Water Currents                           | 22 - Communications, Navigation & Control  |
| 9 - Polar & Severe Environments              | 23 - Autonomous Vehicles                   |
| 10 - Oceanographic Instrumentation           | 24 - Satellite Navigation/GPS              |
| 11 - Remote Sensing                          | 25 - Underwater Telemetry & Communications |
| 12 - Metrology & Calibration                 | 26 - Underwater Robotics                   |
| 13 - Autonomous Benthic Stations             | 27 - Intelligent Control                   |
| 14 - Satellite Oceanography & Meteorology    | 28 - Power Sources                         |

Prospective authors should submit a single page title and abstract (300 to 500 words) in these or related subject areas. The single page Abstract Submittal Form provided on the reverse side must be completed, showing title, author(s) name(s) [designate one author as contact], affiliation, postal and e-mail addresses, and telephone and fax numbers. In the abstract, authors should describe the problem that is addressed, indicate its importance and describe how this work contributes to the field. Authors must indicate a primary and secondary subject category (from topics 1-28 above) and any preference for a poster presentation. Talks will be 20 minutes in length.

The schedule for authors is:

- ◆ **Abstract Deadline** → 28 January 1994
- ◆ **Notification of acceptance to authors** → 1 April 1994
- ◆ **Camera-ready copy (6 pages max)** → 10 June 1994

Due to the international nature of the conference, the above dates should be considered firm.

Abstracts and supporting information should be mailed to OCEANS 94 Conference Services c/o:

- OCEANS 94, Computer Science Department, Texas A&M University, College Station, TX 77843, USA  
Fax: (409) 847-9284, e-mail: oceans94@cs.tamu.edu for North American authors.
- OCEANS 94 - SEE - 48 rue de la Procession - 75724 Paris Cedex 15  
Fax: +33 (1) 44 49 60 49, e-mail: vleguen@ifremer.fr for Europe and other country's authors.

## OCEANS 94 OSATES Conference Abstract Submittal Form

Paper Title: \_\_\_\_\_

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If yes, indicate place and date: \_\_\_\_\_

Subject Categories are listed on the reverse side. Please indicate number of subject heading that most directly applies to your abstract in Primary and Secondary (if appropriate) spaces.

Primary  
(required) \_\_\_\_\_

Secondary  
(optional) \_\_\_\_\_

Prefer Poster Presentation  
yes \_\_\_\_\_ no \_\_\_\_\_

Note to Authors: The Official language of the Oceans 94 Conference is English. The OCEANS 94 OSATES Program Committee will evaluate papers on the basis of information supplies on this form only.

**ABSTRACT:**

**Abstract Due Date: January 28, 1994**

FAX: North America (409) 847-9284

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## IEEE-USA Survey Shows Electrical Engineers Divided on NAFTA

A survey conducted by the United States Activities unit of The Institute of Electrical and Electronics Engineers Inc. (IEEE-USA) reveals sharp differences of opinion on the pending North American Free Trade Agreement (NAFTA). More than 100 engineers responded to the questionnaire published in the Sept. 27 issue of *Electronic Engineering Times*.

The greatest number of respondents who are Institute members (42 percent) wanted IEEE-USA to support NAFTA. However, a large majority of non-member respondents (58 percent) opposed the pact. About 20 percent of both groups would have the unit take no position. Overall, the survey registered these results: 32 percent favored NAFTA; 44 percent opposed it; and 21 percent took no position. More than 60 percent claimed membership in the Institute.

The survey also exposed strong regional differences on the proposed agreement. Participants in the Northeast and South were evenly divided on the treaty's merits, while those from the Midwest and West were opposed by a margin of two-to-one. The number of responses from each of the four regions was about the same.

A greater consensus emerged on the perceived economic effects of NAFTA. Eighty percent of the respondents maintained that the proposed agreement will increase the flight of investment capital from the United States to Mexico or Canada. More than 70 percent worried that the agreement will increase the cross-border transfer of U.S. manufacturing jobs.

Engineers are almost equally divided on whether NAFTA would affect U.S. competitiveness, economic prosperity and their employers' businesses. But the greatest number of respondents (47 percent) believe that NAFTA would reduce employment opportunities for U.S. electrical engineers.

Comments made by engineers who participated in the sur-

vey underscored the intensity of the debate and the high stakes involved. "The United States needs a regional alliance to compete with the Pacific Rim and Europe. And if we don't ally with Mexico, Japan will," a pro-NAFTA respondent wrote. Said another: "We are headed for a global economy; we need to dive in and learn how to compete."

Others disagreed: "I've already lost two jobs, one to Mexico and one to Taiwan — how can I compete against engineers who will work for two dollars an hour?" wrote one. "Companies will build plants in Mexico to dump products into the U.S. market, driving U.S. firms out of strategically-important markets like semiconductors and flat-panel displays," warned another. "NAFTA's just another cost-reduction project," an automation consultant said.

IEEE-USA commissioned the poll after numerous requests on its NAFTA position by members of Congress, the Clinton Administration, the news media and other organizations. Considering the highly polarized results, Charles K. Alexander Jr., IEEE vice-president for professional activities, said: "IEEE-USA is committed to fair trade policy, but we are concerned about the potential loss of the U.S. manufacturing employment base. The survey indicates that we must obtain more and better information about the potential effects of NAFTA on the vital U.S. electrotechnology sector, the nation's largest manufacturing industry."

A report on the survey results is available from IEEE-USA at 202-785-0017.

The IEEE is the world's largest technical professional society, with an international membership of more than 320,000 electrical and electronics engineers and computer scientists. IEEE-USA, which this year is celebrating its 20th anniversary, promotes the professional careers and technology policy interests of IEEE members in the United States.

## IEEE-USE To Honor Former Commerce Department Official At Annual Labor Day Meeting

The U.S. Activities unit of The Institute of Electrical and Electronics Engineers Inc. (IEEE-USA) is recognizing Robert M. White, formerly under secretary of technology in the U.S. Department of Commerce, with its 1993 distinguished public service award. IEEE-USA will present its annual awards at the unit's Professional Activities Committees for Engineers (PACE) conference and workshop on September 3-6 in Portland, Ore. This year's IEEE-USA Annual Labor Day Meeting will focus on the theme, "Survive, Grow, Prosper." Sessions will address engineering employment and professional devel-

opment issues, intellectual property rights, pension reform and technology policy.

White's leadership as the first under secretary of technology, where he focused the newly-created Technology Administration on advancing the competitiveness of U.S. industry, earned him IEEE-USA's special recognition. Among his many accomplishments, he established the Advanced Technology Program to stimulate development of pre-competitive technology. White also led efforts promoting the development of manufacturing technology centers and the state technology



extension program to assist small- and medium-sized businesses.

Leo Young, who has worked for more than 20 years to improve the pension system for all professionals, will be presented with IEEE-USA's award for distinguished contributions to engineering professionalism. He will also be recognized for supporting national technology policy. As 1980 IEEE president, Dr. Young advanced the issue of portable pensions at the Institute and other technical professional associations. He also served as a liaison between the IEEE and U.S. Department of Defense, where he has held leadership positions in improving technology policy implementation.

IEEE-USA will present literary awards in two categories to three of the nation's most distinguished journalists in the technology field. Jonathan A. Titus, editorial director of *EDN Magazine*, will be recognized for literary contributions furthering engineering professionalism for his incisive editorial writing on a broad span of engineering professional issues. Walter J. Schuch, technology columnist for the *Arizona Re-*

*public*; and Jon Van, technology writer for *The Chicago Tribune*, will share honors for literary contributions furthering public understanding of the profession.

Robert A. Kamper, director of the NIST Boulder (Colo.) Laboratories will receive the Harry Diamond Memorial Award for achievements in electrotechnology while in the U.S. government. Kamper is being cited for three efforts: pioneering the application of superconducting quantum-mechanical principles to metrology; directing development of advanced cryoelectronics devices; and guiding a metrology program supporting the lightwave industry.

IEEE-USA will award four long-time volunteers with Citations of Honor: Wayne E. Amacher of Sunnyvale, Calif., for his contributions in the development of the regional PACE network; Joseph M. DeSalvo of Greensburg, Pa., for leadership on the regional and national level; Carl K. Kintzel of Cedar Rapids, Iowa, for successful formulation and communication of PACE activities; and James F. Strother of Alexandria, Va., for direction of professional and technology policy activities.

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## IEEE-USA Legislative Report

### IN BRIEF

- SENATE BILL OPENS LOCAL PHONE SERVICE TO COMPETITION
- TWO SENATORS SPONSOR BILL TO AID RETIREES GYPPE IN ANNUITY COMPANY FAILURE
- HUGE SAVINGS PREDICTED FROM SATELLITE NAVIGATION FOR AIRCRAFT
- ISSUES OF INTEREST TO IEEE IN BUDGET ACT
- HOUSE COMMITTEE SEEKS IEEE VIEWS ON NAME CHANGE FOR NATIONAL SCIENCE FOUNDATION

### Senate Bill Opens Local Phone Service to Competition

Age-old questions of monopoly and competition that have been features of the public policy debate on the telephone system continue to be worrisome to Congress, and hearings will resume in September on a Senate bill that encourages infrastructure development and promotes competition in telecommunications by ending the monopoly on local service. The legislation (S. 1086) has been booed and applauded since its introduction on June 9 by Sens. Daniel Inouye (D-HI) and John Danforth (R-MO).

As Inouye sees it, the nation's communications infrastructure cannot be improved at the right pace without massive private investment, initiative, and imagination. Improvements will bring advanced communications services to small businesses as well as to ordinary citizens and "residential, low-income, disadvantaged, education, medical, rural, and other users who might otherwise be excluded from the information age."

S. 1086, he said, "will speed the introduction of advanced technology to everyone's home and business. These new serv-

ices are essential for the delivery of home health care, two-way interactive educational instruction, and more rapid business communications."

There is no real "companion" bill in the House to S. 1086 but there are several proposals that deal with local exchange competition, universal service, and infrastructure development. One of these is H.R. 1504 (3-29-93) that promotes modernization of the communications infrastructure and encourages competition in specific sectors of the market. The list of 14 sponsors is headed by Rep. Rick Boucher (D-VA), who chairs the science subcommittee of the House Science Committee.

The industry association of independent companies reacted sharply — and adversely — to the idea of competition in the local exchange marketplace. This body, the U.S. Telephone Association, held a press conference July 28 in Washington to introduce three studies that predict that competition now will force a breakdown in the present pricing structure, with implications of "seismic intensity" for residential phone service rates. One study concludes that services that will be subject to competition in the next few years (switched access and intraLATA toll service) currently generate about \$20 billion a year, above cost. Thus, this "contribution" covers a shortfall in local residential access rates of over \$17 billion, and competition will drive down the contribution, placing the subsidy at risk—according to USTA.

The USTA's goal, officials have said, is not to block FCC and state efforts to introduce competition, but they hope the studies will persuade the FCC to "pause" before going ahead with its docket on expanded interconnection.

Meantime, a group of House members has urged the FCC

to proceed cautiously with deregulation of local services. In a July 27 letter to the Chairman of the FCC, the House group said it is very important to consider the effect expanded local competition will have on residential, single-line business and rural telephone service. "While competition is developing for large-volume users of long-distance services in the central business districts of many cities, residential and small business customers must rely for the foreseeable future primarily on service from the local exchange carriers which, in turn, are obligated to serve those customers."

The letter was signed by 16 members, many of them being key players on the House Telecommunications and Finance Committee, including Reps. Rick Boucher, W. J. Tauzin, Joe Barton, Michael Oxley, Jim Slattery and Dennis Hastert. It was written with full recognition that the FCC is now considering taking additional steps to open the long-distance access and local exchange markets to competition.

Sen. Inouye's bill, S. 1086, promotes competition as the best way to speed introduction of new technologies. "Competition has worked for long-distance service and in the market for telecommunications equipment. Four fiber optic networks are available for interstate phone calls, and the diversity of telecommunications equipment is truly astounding." Further, "the bill preempts state laws that restrict the entry of competitors to local telephone companies and requires local telephone companies to open their networks to all users" He added that the bill contains safeguards to prevent the Bell companies from engaging in cross-subsidization and self-dealing when they enter the information services market.

Witnesses from USTA, the Council on Competitiveness, the Telecommunications Industry Association, newspaper publishing associations, and individuals testified at the initial hearing on S. 1086 (on July 14). The subcommittee has scheduled another hearing for September 8.

IEEE-USA addressed some of these issues in a summary document issued at the conclusion of a conference held May 4-5, 1993, to explore the role of telecommunications in the National Information Infrastructure (NII). The participants agreed on a broad set of observations and recommendations that included the following:

The private sector will supply the technology, the investment, the plant, the human resources, the software, the applications and the organization necessary to realize the NII. Technologies that appear distinct today (local exchange and long distance telephone, computer systems and networks) will soon become blended, if not indistinguishable. Industries and institutions are already in the process of mending, merging, and making alliances....

Participants also agreed that the national government must play an enabling role in "orchestrating the vision and ensuring proper incentives to the private sector in moving toward the new NII." In doing so the government must use some of the following approaches: economic regulation in the event of monopoly or market failures; economic facilitation, by using deregulation when it can encourage effective competition; by supporting R&D; and by reducing investment risk and encouraging innovation.

The national government has already performed these functions in partnership with universities and industry in developing the National Research and Education Network (NREN) and the Internet, the group added.

### Two Senators Sponsor Bill to Aid Retirees Gyped in Annuity Company Failure

Two senators who serve on the Labor Committee have sprung to the defense of American workers whose pension protections were jeopardized by a recent Supreme Court decision. In late July, Sens. Howard Metzenbaum (D-OH) and Nancy Kassebaum (R-KS) introduced a bill to "restore" to the Labor Department the authority that was thought to reside there to protect workers in certain circumstances. A few days later (on August 2) Metzenbaum called a hearing to get the opinions of the Labor Department and aggrieved workers, as well as employer groups and pension plan bodies.

In opening the hearing, Metzenbaum said the Supreme Court decision (Mertens v. Hewitt Associates, June 1, 1993) held that ERISA does not provide any restitution to workers who lost their pensions when their companies bought "cheap, high-risk insurance annuities" to replace pension plans that the company itself had terminated. The most prominent instance of this development was the bankruptcy in 1991 of the California company, Executive Life Insurance Company, which left workers with greatly reduced retirement benefits and an uncertain future. According to Metzenbaum, the Supreme Court's 5-4 ruling in the Mertens case "severely narrowed the legal protections available to workers and retirees under ERISA. The Court held that ERISA does not clearly define the relief available for violations of the pension and welfare benefits law and therefore relief is limited to injunctive relief. In the light of the Mertens decision, workers and retirees now have less protection than they enjoyed before the enactment of ERISA in 1974."

The Metzenbaum-Kassebaum bill (S.1312, July 29) provides legal protection to workers and retirees whose employers purchased "shaky" retirement annuities in violation of ERISA. The bill, the sponsors say, "will protect the 84,000 workers and retirees whose retirement security has been jeopardized by the insolvency of Executive Life."

S. 1312, sponsors say, "makes clear that in cases where a pension plan fiduciary purchases insurance annuities in violation of ERISA, the Court may award appropriate relief, including the purchase of a back-up annuity to remedy the breach." Sen. Metzenbaum said he will introduce "comprehensive" legislation in September to protect workers' pension rights.

The Labor Department, represented at the hearing by the Assistant Secretary for Pension and Welfare Benefits, blasted the Mertens decision, saying it casts doubt on the structure of ERISA itself. According to Olena Berg, the Court ruled that participants could not receive complete relief under ERISA for benefits they lost as a result of a fiduciary breach. "We believe this decision has made uncertain the protection of the benefits of millions of participants and retirees. We believe Congress intended to afford these remedies to participants, beneficiaries, and the Secretary of Labor." She added that the Labor Department has filed nine lawsuits in the annuities area, directly

affecting the benefits of over 16,000 participants. The total dollar value of questionable annuities in the Executive Life investigation is about \$1 billion.

The Mertens case has resulted in two specific problems for the Labor Department, Berg said. 1) casts doubt on which remedies are available to redress violations of ERISA, and 2) eliminates most liability on the part of non-fiduciaries who knowingly participate in fiduciary breaches.

In sum, the Labor Department "urges Congress to enact amendments that would make clear that some of the remedies that were available before ERISA for knowingly participating in a fiduciary breach are still available."

### **Huge Savings Predicted From Satellite Navigation For Aircraft**

A Congressional aviation panel heard conflicting testimony recently on the benefits to be derived by the airlines, the public, and the government from installation of a satellite navigation system for air traffic control. The influential publication *Aviation Week* (August 2, 1993) said all the parties—the airlines, general aviation, business aircraft and the Defense Department and the FAA—fully agree that use of the Global Positioning System will "revolutionize airspace operations."

In opening the hearing (on July 28) Rep. James L. Oberstar (D-MN) called for full exploration of potential benefits—in the form of reduced costs to the government and the aviation industry—as well as the problems that face "large organizations such as the FAA, DoD, and international bodies in changing the way they do business." Oberstar chairs the House Aviation Subcommittee (a unit of the Public Works and Transportation Committee).

As one example, Oberstar said, over \$1 billion can be saved if precision approaches can be achieved using satellites to replace the FAA's microwave landing system. Also, aircraft could operate closer together—particularly over the ocean, saving millions of dollars in fuel-efficient routing.

The Global Positioning System (GPS) is a satellite system developed by DoD for military purposes. However, it was not designed for civil aviation use and must be augmented for certain "demanding" civil applications, such as precision approach. The satellites circle at 11,000 miles above the earth and emit continuous, identical radio signals. A simple receiver measures the distance from at least four satellites by calculating the time it takes the signal to arrive. The satellites provide complete worldwide coverage at both low and high altitudes.

The FAA is a strong advocate of GPS and "has played a leadership role in the application of this exciting new technology to aviation." The FAA's views were given by Martin Poesky, an Associate Administrator. The FAA, he said "has worked cooperatively with DoD and with system users, and has made progress on the technological, operational and institutional fronts simultaneously."

Poesky ticked off these developments:

- DoD will declare GPS to have Initial Operational Capability by year end.
- FAA has already begun to use GPS in domestic and oceanic airspace "as a supplemental aid for enroute and terminal navigation and non-precision approaches."

- One airline—Continental—will begin use of GPS-based approaches this fall by equipping some Continental Express commuter routes with GPS navigation for use in enroute and terminal procedures.

Poesky had high praise for DoD and the private sector in fostering GPS technology. DoD pioneered the system 20 years ago and "had the foresight" to include a "civil mode." "Cooperation between the DoD and the FAA has been outstanding." FAA has worked closely with the user and supplier community, as well as the international community "to gain the full benefits of this vastly improved technology." He said the actual policies and strategies for civilian use are being developed right now by a working group chartered by the Secretaries of Transportation and Defense.

An enthusiastic advocate of GPS is Robert R. Ferguson, president of Continental Airlines. He told the subcommittee that "indecision" and lack of direction on the government's part are costing the airline industry in terms of safety and operating expenses. "Hundreds of millions of dollars, if not billions, are being lost annually..." He said expected benefits will justify the investment but "there is a need to provide airlines with early benefits to offset costs." The optimistic timetable for global implementation, he said, is 14 years.

The airline industry body, the Air Transport Association, is also a supporter of GPS use. However, the potential benefits depend on FAA, according to ATA official J.R. Fleming. The FAA is a large, geographically dispersed body, with diffused management. "There is no central authority to ensure that all the necessary pieces come together at the right time and in the right manner. A systems management approach is required to ensure that these kinds of problems are identified early and dealt with before the satellite implementation program is seriously delayed."

Other witnesses told the subcommittee that there are costs involved in adapting to GPS. Cost, cost sharing, and cost recovery top the list of unresolved matters, according to a radio-navigation specialist. J. M. Beukers characterized GPS as a "very expensive system, with annual direct operating costs of \$500-600 million." This figure does not include indirect costs, the price of augmentation satellites and/or additional communications. In sum, he said, the cost is "considerably higher than it needs to be due to the military mission, defense procurement activities and hardware carried on the satellites that is irrelevant to positioning. The realization of any significant cost savings by phasing out existing systems is perhaps ten years away...."

On the roles and missions question, Beukers said the most difficult issue to resolve is "the dichotomy of purpose between DoD's requirements for national security and meeting the stringent safety requirements of civilian aviation." Some European aviation agencies have voiced concern that GPS is "owned and operated by the Pentagon."

USAB's Aerospace R&D Committee has been studying space operations, with emphasis on reducing costs, for the past few years. Members hope that space activities in the future will emphasize economic benefits—not political or cultural. If the cost of space operations drops sharply, "space will evolve into an area of large economic value for our country." This is the

philosophy of the Committee. USAB OpCom will consider an entity position statement on this topic in September.

The Aerospace R&D Policy Committee addressed improvements in transoceanic air transport in a working paper released May 25, 1993. "Satellite communications would be employed to improve [air traffic] control. And the full power of space-related communications, remote sensing and navigation, in concert with digital transmission and sophisticated computer techniques could be utilized to improve the efficiency of higher volume commercial air transportation operations—both nationally and internationally—at an early moment."

#### **Issues of Interest to IEEE in Budget Act**

Following are summaries of some of the provisions of historic interest to IEEE that are included in the Omnibus Budget Reconciliation Act (Public Law 103-66), which was signed into law by the President on August 10, 1993:

- Education and Training Provisions - Restores the \$5250 income tax exclusion for employer-provided educational assistance retroactively to July 1, 1992, and extends the provision until December 31, 1994.
- Energy Tax - Imposes a 4.3 percent tax on transportation fuels, including gasoline and diesel fuels, with commercial airline fuel exempt for two years. (Revenue Impact: +\$4.4B in 1994; + \$23.4B over 5 years)..
- Research and Development Provisions - Restores the expired research and experimentation tax credit retroactively to July 1, 1992, and extends the provision through June 30, 1995. (Revenue Impact: -\$2.2B in 1994; -\$4.8B over 5 years).
- Communications Licensing and Spectrum Allocations - Transfers frequencies, including those that can be licensed utilizing competitive bidding, to the Federal Communications Commission. (Revenue Impact: +\$10.2B over 5 years).
- Pensions Provisions - Reduces the cap on deductible compensation for qualified retirement plan purposes from \$235,000 to \$150,000 (Revenue Impact: +\$179M in 1994; +\$2.5B over 5 years). Eases restrictions on pension investments in real estate.

- Lobbying Provisions - Broadens the statutory definition of lobbying; and disallows deductions for certain lobbying expenses by businesses and trade associations. 501(c) (3) organizations including IEEE, were exempted in the final legislation.

#### **House Committee Seeks IEEE Views on Name Change for National Science Foundation**

IEEE-USA has endorsed a proposal, originally launched by the American Association of Engineering Societies (AAES), that the name of the National Science Foundation be expanded to include "Engineering" in its name. In response to a query from the House Committee on Science, Space and Technology, IEEE-USA added its support to the name change. In a letter to IEEE dated August 6, the Committee said it plans to incorporate the change in the NSF Authorization Act for 1994, which is now under consideration.

USAB Chairman Charles K. Alexander told the Committee (in a letter dated August 19) that IEEE decided to support the proposal after a great deal of careful consideration, noting that "... there is a great diversity of views within our IEEE U.S. membership (240,000), which includes many scientists as well as engineers."

He listed the following arguments in favor of expanding the Foundation's name:

- 1) that engineering R&D "is a distinct but complementary activity to scientific research;"
- 2) the new emphasis on "engineering" broadens the base of political support for NSF; and
- 3) the name change can promote closer interaction between science and engineering "by putting them on an equal footing" and will represent "a commitment by the engineering community to support a robust research program at NSF from which science will also benefit."

In 1985 Congress approved a law amending the Foundation's organic act to clarify that NSF is authorized and directed "... to initiate and support research fundamental to the engineering process and programs to strengthen engineering research potential and engineering education programs at all levels in the various fields of engineering....." That law, P.L. 99-159, included this policy statement and the word "engineering" in the body of the Act each time the word "science" was used but the name of NSF was not changed.

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All invited and contributed manuscripts will be peer reviewed. Authors who wish to contribute papers for this special issue are invited to mail three copies of their manuscripts to:

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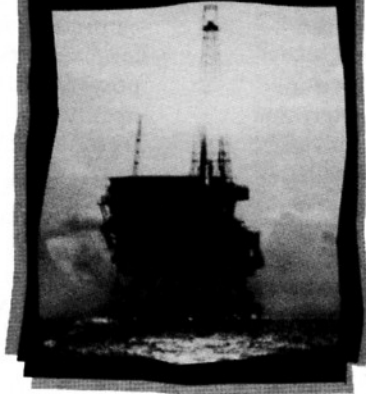
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James A. Watson, Editor—Georgia C. Stelluto, Associate Editor

## IEEE-USA Challenges Department of Labor Findings

The U.S. Department of Labor (DOL) has announced plans to amend its rules governing the permanent admission of foreign nationals to work in the United States. The Secretary of Labor would be able to determine whether the current alien labor certification process can be streamlined to expedite the admission of foreign-nationals by utilizing lists of occupations having shortages or surpluses, if the rule change were implemented.

DOL's proposed rule change is based on a finding that labor shortages in certain occupations, mostly at the Ph.D. and Masters levels, are occurring in several states. The occupations deemed to be in short supply include computer software engineers and computer systems analysts, in addition to materials, chemical and mechanical engineers.

IEEE Vice President for Professional Activities Charles K. Alexander communicated IEEE-USA's very serious concerns about the Labor Market Pilot Program, which would be implemented under the rule change, to DOL on April 28. IEEE-USA challenged DOL's decision not to consult with experts or organizations representing the affected occupations before publishing the proposed rule change and list of shortages.

Further, IEEE-USA also strongly objected to DOL's decision to proceed with the program at a time when unemployment among engineers is increasing sharply. Contact the IEEE-USA Office in Washington, D.C., for further information on DOL's proposed regulations and IEEE-USA's comments.

## Committee Chairman Testifies on Energy Funding

IEEE-USA Energy Policy Committee Chairman James F. Fancher testified on March 24 before the House Subcommittee on Energy and Water Development. He outlined Federal funding priorities for energy research in fusion, nuclear, electric, and renewable energy.

Dr. Fancher said that IEEE-USA supports research that addresses both the reliability and continuity of the nation's electric power supply system and the environmental issues associated with electric power production, transportation, and utilization. He requested support for more research into the possible health-related effects of electric and magnetic fields from electric power transmission and distribution, and he also asked for increased Government funding of programs for electric energy storage systems.

Further, Fancher said that IEEE-USA supports continuing research to maintain a viable nuclear energy option, adding that nuclear fission reactors will be needed to help meet the needs of an expanding economy. He

opposed plans to abandon nuclear reactor research. His testimony also endorsed the Administration's request for continuing funding of fusion research, noting the long-term potential of fusion to provide large amounts of power with environmental advantages and superior operational safety. Copies of his testimony can be obtained from the IEEE-USA Office in Washington, D.C.

## IEEE-USA Promotes National Competitiveness Legislation

With strong support from the Clinton Administration, the U.S. House of Representatives has passed the **National Competitiveness Act of 1993, H.R. 820**. The bill would authorize \$1.9 billion in FY 1994-95 Federal investments to strengthen the standards, technology development, and manufacturing outreach programs of the National Institute of Standards and Technology, provide capital for technology commercialization, and expand manufacturing-related activities at the National Science Foundation. The Senate Commerce, Science, and Transportation Committee, is considering a companion bill, S.4, which also contains provisions on information infrastructure and engineering work force issues. A Senate vote on S.4 is expected sometime in June.

IEEE-USA's Competitiveness Committee is working to support passage of this legislation. The Committee has endorsed testimony by Ernest Daman, Chairman of the American Association of Engineering Societies, supporting the manufacturing outreach provisions of H.R. 820. A Legislative Bulletin recently was sent to key contacts urging a letter-writing campaign in support of the bills. For more information on these bills, their provisions and status, contact the IEEE-USA Office in Washington, D.C.

## Engineering Ethics Lecture Materials Available

IEEE-USA Ethics Committee members Joseph H. Wujek and Deborah G. Johnson have prepared a speaker's kit to aid lectures on engineering ethics. The kit, "How to Be a Good Engineer," can be used by either engineering students or practicing engineers.

The materials available include a speaker's guide, lecture notes, and 51 masters for overhead foils or slides. A set of 35mm two-color slides is also available.

The kit is arranged so that the speaker may delete portions or supplement additional information. Some of the material is specific to IEEE members, electrical engineering, and computers, but most of it is relevant to general engineering ethics.

Members can receive presentation information at no cost for non-commercial educational purposes. To request a kit, contact the IEEE-USA Office in Washington, D.C.



# IEEE USA HOT LINES

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James A. Watson, Editor—Georgia C. Stelluto, Associate Editor

## CCIP Forum Explores Development of National Information Infrastructure

Approximately 200 representatives of industry, government, academia, and associations gathered in Arlington, Virginia, for a forum hosted by IEEE-USA's Communications and Information Policy Committee (CCIP). With the theme, "Telecommunications as Part of the National Information Infrastructure," attendees explored the development of a national information system.

Keynote speaker Arno Penzias, vice president of research at AT&T Bell Laboratories, highlighted the need for interoperability as a primary design criterion for the information infrastructure. He urged policymakers and designers to keep infrastructure applications clearly in mind.

Other speakers included Representative Edward Markey (D-Massachusetts), House Telecommunications Subcommittee chairman, and CCIP Chairman Will Stackhouse. Markey told forum attendees that digital communications services must be universal and affordable. He specified the integrated services digital networks as an interim step in developing an infrastructure.

Stackhouse asked participants to strike a balance between consensus and creativity in developing a blueprint for a 21st century national telecommunications system. He emphasized the conference goal of including broadcast, computer, and other industries in investigating technology trends, perspectives of telecommunications providers and users, and infrastructure projects and policy.

A summary report of the proceedings, including presentations of more than 30 other speakers in six panel sessions, will be available soon from the IEEE-USA Office in Washington, D.C.

## IEEE-USA Releases New Federal Legislative Agenda

IEEE-USA's new Federal Legislative Agenda was presented to Members of the 103rd U.S. Congress in May, as they began to address the new technology and competitiveness proposals of the Clinton Administration.

The most recent in the biennial series, the Agenda highlights positions taken by IEEE-USA on public policy issues of concern to IEEE's U.S. members. The topics covered are industrial competitiveness, retirement income policy, defense conversion, career issues, intellectual property, research and development, civilian space program, computers and communications, energy, and engineering in health care. Serving as an executive summary and ready reference for Members of Congress and their staffs, the Agenda also provides a comprehensive list of IEEE-USA positions for the information of IEEE members and outside organizations.

Copies of the Agenda and related position statements are available free of charge on request to the IEEE-USA Office in Washington, D.C.

## Manpower Committee Continues To Challenge the U.S. Department of Labor's LMI Project

On behalf of IEEE's U.S. members, USAB Chairman Charles K. Alexander wrote to Members of the House and Senate Judiciary Committees, on July 1. Alexander's letter supported Labor Secretary Robert Reich's request to the House and Senate Judiciary Committees that a statutory requirement for a Labor Market Information (LMI) Pilot Program be removed from the **Immigration Act of 1990**.

"It should be clear from the adverse comments received by the Labor Department that the LMI Pilot Program ought to be terminated," Alexander said. The proposed program could seriously damage the careers of U.S. scientific and engineering professionals by allowing foreign nationals in certain occupations to receive expedited permanent resident status in the United States.

IEEE-USA also urged the Department of Labor to delay further implementation of related rulemaking until Congress can thoroughly review the matter at hearings and develop appropriate legislative recommendations.

The Manpower Committee sent a Legislative Alert to volunteers and contacts in other concerned organizations with an update on recent developments, asking them to communicate their support for Congressional action to terminate the LMI Pilot Program by writing to one or more members of the Judiciary Subcommittees that handle immigration issues. Changed economic circumstances, including increased unemployment in scientific and engineering fields is the primary justification for recommending that the program be repealed or amended.

## USAB Chairman Supports Budget Deficit Reduction

In a letter sent to all Members of Congress, IEEE's United States Activities Board Chairman Charles K. Alexander noted IEEE-USA's strong support of President Clinton's efforts to reduce the Federal budget deficit. In addition, the letter endorsed related efforts to encourage economic growth and productive investment, create jobs, and promote U.S. economic and technological competitiveness.

According to Alexander's letter, President Clinton's budget initiatives, as contained in the **Omnibus Budget Reconciliation Act of 1993**, H.R. 2141, includes many provisions of particular importance to IEEE's U.S. members. H.R. 2141 would authorize a permanent extension of the \$5,250 tax exclusion for employer-provided educational assistance and a permanent extension of the research and experimentation tax credit.

IEEE-USA also supports the package's targeted capital gains incentives for investment in small businesses and a major revenue raising provision that would permit the Federal Communications Commission to use auctions to assign portions of the public radio spectrum to commercial users.



# Call for Papers

## SYMPOSIUM ON AUTONOMOUS UNDERWATER VEHICLE TECHNOLOGY

July 19-20 1994

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The *IEEE Oceanic Engineering Society* is sponsoring a symposium on Autonomous Underwater Vehicle Technology to be held in the Boston, MA. area at the Cambridge Center Marriott Hotel on July 19-20, 1994. The objective of the Symposium is to disseminate knowledge of recent technological advances in the field, to be a focus for the current state of the art including identification of technology shortfalls and to provide a forum for discussion of new relevant ideas.

### TOPICS

The Symposium will focus on topics that are related to the AUTONOMOUS OPERATION OF UNDERWATER VEHICLES. These include but are not limited to:

Sensors and Multi-Sensor Fusion	Communications and Telemetry
Navigation	Imaging Techniques and Systems
Modeling and Simulation Methods	Mission Control and Software Architectures
Energy Systems	Autonomous Manipulation
Vehicle Design and Control	Launch and Recovery Techniques and Issues
Multiple Cooperating Vehicles	

The Symposium will include a **VIDEO PROCEEDINGS** Session and visits to area technical attractions including the C.S. Draper Laboratories.

### ABSTRACTS

Prospective authors should submit a proposed title and an abstract (300-500) with a cover sheet containing title author(s) names, addresses with one author named as the point of contact including phone and fax numbers. Since acceptance is by review of abstracts, it would be helpful if authors would describe the problem addressed solutions obtained and its importance to the subject of the conference. Abstracts should be submitted to:

Professor A.J. Healey, Technical Program Chairman  
Department of Mechanical Engineering  
Naval Postgraduate School  
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### DEADLINES

The following deadlines have been established and it is important that authors adhere closely to these dates.

<b>Abstracts Due:</b>	<b>November 1, 1993</b>
<b>Notice of Acceptance and Authors Kits Distributed</b>	<b>January 15, 1994</b>
<b>Full Paper Manuscript (Camera Ready)</b>	<b>April 15, 1994</b>

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS  
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# Call for Videos

IEEE Oceanic Engineering Society  
Symposium on Autonomous Underwater Vehicle Technology

## AUV 94

July 19-20, 1994

Charles Stark Draper Laboratories  
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The IEEE Oceanic Engineering Society is sponsoring the next Symposium on Autonomous Underwater Vehicle Technology (AUV 94) on July 19-20, 1994. The Symposium will be held at the Charles Stark Draper Laboratories in Cambridge, Massachusetts USA.

The focus of the Symposium is AUTONOMOUS OPERATION OF UNDERWATER VEHICLES. Topics include but are not limited to:

Sensors and Multi-Sensor Fusion	Communications and Telemetry
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Current and archival footage of events significant to the development of autonomous underwater vehicle technology and applications are welcome. Video segments demonstrating results described in the conference proceedings are particularly appropriate.

Video clips from one to five minutes length are suggested. Written abstracts describing the video should accompany each clip. Abstracts should not exceed 100 words, and should also include title and author names, organizational affiliation, address, and phone/fax/e-mail as appropriate. Inclusion of an additional abstract copy in electronic form (electronic mail, ASCII or WordPerfect diskette) is appreciated.

Clarity of the video submissions is essential. Narration and audio are critical components. Entries should be edited to provide a high quality, quickly-paced presentation of general interest to symposium attendees. We can accommodate standard play (SP) VHS, Super VHS and 8mm camcorder tape. Extended play (EP/LP) format VHS is unacceptable. Please label your videotape mailer "Magnetic Media Enclosed."

All selected videos will be professionally compiled without individual clip editing onto a single master, duplicated, and provided to conference attendees with the printed proceedings at no extra charge.

Submission Deadline:	May 15, 1994
Notification of Acceptance:	June 15, 1994
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