



IEEE STANDARDS BEARER



P-5

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Complimentary Newsletter

April 1993



Wallace Read
New VP of Standards

The IEEE Standards Board welcomes its new Vice President of Standards, Wallace Read. Dr. Read is no stranger to the IEEE. He has held the offices of Director of Region 7 (Canada) in 1984-85, Secretary of IEEE in 1988, and Treasurer in 1989-90. He was elected Vice President, Standards Activities, for 1993 and in that capacity will commence a sixth year of service on the Board of Directors.

Dr. Read has had a distinguished career in the pulp and paper and electric power utility industries. He is currently President of the Canadian Electrical Association (CEA), which is the national organization representing electric utilities in that country. In addition to his responsibilities at CEA, he is Chairman of the Canadian Centre for Marine Communications and a member of the Standards Council of Canada.

His professional affiliations include being a member of the Association of Professional Engineers and Geoscientists of Newfoundland, a Fellow of the Engineering Institute of Canada, and of the IEEE. Adding to his numerous awards of recognition, the Technical University of Nova Scotia recently conferred upon him the degree of Doctor of Engineering, *Honoris Causa*. ♦

Telecommunications— Is It Time for New Standards Efforts?

by Ivor Knight

The telecommunications industry has become an integral part of global commerce as more and more businesses come to depend on communications services to span distances in support of the production and sales of their products. Today it is unheard of to run a business of any size without, as a minimum, a telephone, and, in most cases, a facsimile (fax) machine, and links to external databases of some kind or other. With the growth in multinational organizations, these communications services are not restricted to local calls or even national calls, but reach out to adjacent countries and even other continents. A dress for sale in Philadelphia, made in a town outside Mexico City, with cloth from South Carolina and buttons from Singapore, can only happen with a lot of very good communications—and that presents a standards problem.

The deregulation of the telecommunications service industry—or *liberalization* as our colleagues in Europe call it—has clearly provided industry and consumers alike with many new services unheard of ten years ago; however, it has presented major headaches for the standards design engineer. Observing this, the IEEE Communications Society (COMSOC) Board of Directors initiated a study in 1992 to see how COMSOC might use its extensive technical resources around the world to help keep international telecommunications and information technology (IT) standards development in step with innovative new technology and the demand for new and improved communications services.

Standards development in COMSOC is not alien, of course—work has been going on in the COM/TRANSACC committee on basic transmission problems for a number of years. However, the new communications environment of merging IT and telecommunications prompted taking a fresh look at COMSOC's overall role in this area.

At the June 1992 COMSOC Board a report on the status of international telecommunications standards development and a proposed business plan for standards development in COMSOC were debated at length. The report reviewed the status of telecommunications standards development in the US and internationally since the divestiture of the Bell System in 1984. It also examined on a national and international basis the ongoing work in this area by other organizations, and work areas that have been identified by the membership that

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Letter from the editor's desk

Dear Readers,

Two issues back (October 1992) we told you about the SGML pilot project that is underway in IEEE Standards. SGML—Standard Generalized Markup Language—allows the structure of documents to be described and tagged in a generic fashion. Once tagged in SGML, files can travel seamlessly from one platform to another, without the use of conversion utilities and without the loss of structural formatting. I now have good news to report on our progress.

The backbone of the SGML tagging effort is the *document type definition*, or DTD. The DTD defines the tags that are appropriate for a particular type of document, and the DTD we are developing is one that describes the structure of IEEE Standards publications.

Over the past months, the IEEE Standards staff has worked closely with SoftQuad, a Toronto-based company that creates SGML-based software, to develop a DTD for IEEE standards. This prototype DTD, which complies with ISO 8879:1986 (the international standard for SGML), is now complete and is being tested in the department. It will soon be tested with selected standards-development working groups and ultimately will be the basis of the entire database of IEEE standards.

It has required a great deal of effort and patience to get to this point, and we know there is still a considerable distance to go before we achieve our goal. Yet it is exciting to see that months of effort have produced a tangible result. We believe the benefit to standards developers and users alike—helping to lower costs, reduce the time it takes to develop and publish standards, and make standards accessible electronically from any platform—will make our efforts more than worthwhile. We believe that along with the expanded bulletin board capability we reported in the last issue, this effort will help poise IEEE Standards for the next century.

I would like to take a moment to welcome the new members of our 1993 Standards Board and our new Vice President of Standards, Wallace Read. It is fitting that the next IEEE Standards Board meeting will be held in Canada (see announcement, page 9), Wally's home. Wally is the first chair of the Standards Board from outside the US, and we look forward to working with him toward our shared goal of increasing international participation in standards.

Kristin Dittmann

Kristin Dittmann
Editor-in-Chief

1993 NESC Correction Sheet Available

A correction sheet to the Accredited Standards Committee C2-1993, the National Electrical Safety Code (NESC), was issued February 26, 1993. This correction sheet is being mailed to every customer who bought the NESC from IEEE.

If you purchased the NESC from another distributor, you might not receive the correction sheet. IEEE will send you a copy at no charge. For a copy, please write: IEEE Standards Department, NESC Correction Sheet, P.O. Box 1331, Piscataway, NJ 08855-1331.

STANDARDS  BEARER

Vice President of Standards
Wallace S. Read

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THE CHAIR'S COLUMN

Another eventful year is ahead as the world shifts gears to meet major moral, political, economic, and technical challenges. No segment of society will remain untouched as we come to grips with these issues, and engineers are no exception. Standards activities will be on the front lines, as industry leaders recognize their leading role in responding to, and indeed setting the course for, the direction of many of these national and global issues.

It is fitting that this issue of the *IEEE Standards Bearer* highlights the standards activities of the IEEE Communications Society. In many ways, it is at the feet of engineers and scientists in this field of endeavor that we can place the credit or blame for shrinking this world of ours. All the way from the nineteenth century, when news was tapped out over local circuits and continents were linked by trans-ocean cables, to the first wireless transmission at the beginning of the twentieth century, and through to the instantaneous transmission of audio and video signals of today, communications

technologies have dragged us kicking and screaming into the information age.

We who labor in the standards-writing arena are caught in this same whirlpool of activity and will have to struggle valiantly to stay on top. Will our existing consensus process enable us to maintain and enhance our leadership role? If so, how can we strengthen it to ensure that the needs of various interests are met, and that the integrity of the process is kept? If not, what changes are needed, and will we be able to adapt?

Six words can broadly define what we are about: "quality standards, expertly produced, expeditiously delivered." These words highlight a certain interdependency, and yet there is an obvious conflict between these goals. Quality and timely delivery are highly dependent upon competent committee membership that sets aside personal bias while achieving maximum consensus. But it's an even greater balancing act than that. Rushing a standard by sacrificing quality is unacceptable, yet it is equally unproductive to miss a market niche by deliv-

ering a standard too late.

It is a tough call, but I am convinced that IEEE can handle it. After all, we are the best equipped standards-development organization in the electrotechnology field, and we recognize and promote the importance of maintaining close ties with sister organizations on the international scene. Again and again, IEEE standards working groups prove themselves capable of finding innovative ways to meet these complicated demands. I have confidence that by our continued and supportive efforts to draw attention to standards activities, we will succeed in meeting the difficult challenges we face.

W. S. Read

Wallace S. Read
Vice President, IEEE Standards Activities

Telecommunications

(Continued from page 1)

are not within the purview of any known organization. The plan called for COMSOC to set up an organization within its technical committees and a secretariat to manage the development of standards in areas not presently being considered by any other international or regional organization.

It is important to note that COMSOC has been a champion for international standards development for many years. It has promoted standards panels at its very popular conferences and collaborative efforts with organizations devoted to standards development in specific areas of communications technology, such as the ANSI Committee T1 on networking. However, the question on the floor was: Should COMSOC, with its international makeup and enormous technical and professional

talent, do more to help the industry and global consumers than "facilitate" the development of standards by others? Additionally, is there a role for COMSOC, or would its entry into the standards-development world be duplicative?

Contact was made with the principal regional standards-development organizations in the world—Telecommunications Technology Committee (TTC) in Japan; the European Telecommunications Standards Institute (ETSI) in Europe, and Committee T1 in North America—to determine whether they would see benefit in having the IEEE Communications Society enter the standards-development field in a role similar to that of the IEEE Computer Society. Although the results of this informal survey were positive, no specific requirements were identified as demanding the immediate attention of the IEEE's second largest society and, at the Decem-

ber 1992 meeting of the Board of Governors, it was agreed to maintain the status quo pending a call for specific assistance from industry.

Nevertheless, COMSOC is taking an active interest in the "Standards Summit" called by Wallace Read, the new IEEE Vice President for Standards, and has already forwarded a list of discussion items, including its concerns regarding an acceptable methodology of standards development by the individuals in a professional society such as this one. As industry's reliance on telecommunications continues to escalate, chances are we will see a growing interest in broadening COMSOC's standards-development activities. ♦

Ivor Knight is a member of the IEEE Communications Society and the IEEE Standards Board.

Windows to ... STANDARDS USERS—ARE WE LISTENING TO THEM?

by Andrew Salem

Standards activity is very expensive to industry, government, and the public interest groups that support it. It deserves a management system that is at least as good as that which we apply to our individual organizations.

In such a management system, the first step should be to determine the purpose of the standard or the standards activity. This is where the user will be identified. There will most likely be a first, second, and possibly third level of user to identify. The primary user is *that interest group that the standard or the standards activity is intended to serve*. This is the most fundamental issue that a standards group must address, and once identified, every management decision that follows must relate back to assure that the standard does serve the user and user requirements. Such an approach would produce a standards activity quite different from some of those we see today.

It wouldn't be so hard to meet user requirements if we could all agree on who the real users are. John Rankine, IEEE Standards Board member, has pointed out that users exist at varying levels of interest, knowledge, and need. And within the system of standards, user interest, knowledge, and need will vary significantly. But in all cases, the user is unique to the standard. Yet I don't know of any definition of user in the context of standards activity. And so we need to do two things. First, we must clearly define user in the context of standards activity. Second, we need to establish a management system for standards activity that goes beyond the procedures.

In my opinion, user requirements are paramount for any standards activity; everything else is secondary. With this attitude, the cardinal principles of standardization—balance, consensus, and appeals—must be considered and appropriately applied to achieve user requirements. As an example, the present American National Standards Institute (ANSI) process allows any single interest

group to comprise 50% of the total membership of a balloting body. This right should be restricted to a user group. Further, the general interest group can constitute more than 50% of the voting body. Yet the *general interest* group is the least affected group, having the least financial interest in the standard and the least public responsibility for the standard. Nevertheless, the process that we use today allows this group, in effect, to control the standard. These rules almost assure that user requirements will not be met. The definition of balance has to be reconsidered—who votes and at what level in the process must user requirements be considered?

In the context of meeting user requirements, what constitutes consensus? Is it a consensus of all interest groups or of the users? The word *requirements* implies something the user can't live without—a must. The present rules require that all interested parties have an opportunity to be participants. I agree with that. However, in practice, all interested parties vote, and that means that the users will be a minority in the process. There are some standards activities in which only the users vote on the final approval of a standard. Most of these activities involve public safety issues, and I believe it is a proper procedure in these cases. While consensus is sacred in the standards community, I think that in its present form it is overdone, misused, and serves as a weapon against achieving user requirements.

The appeals process is too loosely applied and is successfully used to delay the standards process. I am in favor of putting a framework around the process to clearly define how this process can be included in the context of achieving user requirements. After all, *due* process should not be *endless* process. ♦

Andrew Salem is Staff Director of IEEE Standards and Secretary of the IEEE Standards Board.

New Standards Council of Canada Database Puts International Standards at Your Fingertips

A new on-line database containing information on more than 8 000 international standards is now available from the Standards Council of Canada (SCC).

The database features bibliographic entries on every standard and draft standard published by the International Organization for Standardization (ISO), one of the world's foremost standards-writing bodies.

Since 1947, ISO has been publishing standards on everything from screw threads to computers. These technical documents are used by industries and governments in almost every country.

The ISO 9000 Series of standards, for example, has revolutionized the quality movement by establishing international guidelines for the implementation of quality systems.

Now, thanks to an agreement between ISO and the Standards Council, you need go no farther than the nearest modem-equipped computer to sift through a bibliography of ISO's accumulated wealth of technical information.

Every entry in the new database contains a title, document number, and date of publication as well as the name of the technical committee responsible for the standard.

The cost of accessing the database is \$50 per hour, charged on a per-minute basis. For the same fee, users can also access databases on European Community standards, Canadian standards, standards referenced in Canadian legislation, and notifications issued by countries pursuant to the GATT Agreement on Technical Barriers to Trade.

For more information on accessing the database, contact the Standards Council of Canada, 1200-45 O'Connor St., Ottawa, Ontario, K1P 6N7; fax (613) 995-4564; phone (613) 238-3222. ♦

Awards Spotlight

John Rankine and Helen Wood were given Meritorious Service Awards by the American National Standards Institute (ANSI) on March 17, 1993, at their annual Board of Directors Awards Banquet. This award is given for significant contribution to voluntary standardization and to ANSI.

At its November 1992 meeting, the IEEE Computer Society Board of Governors approved the Hans Karlsson Awards for Leadership and Achievement Through Collaboration. This award will be given no more than once a year to the most outstanding team leader in the field of computing standards. It will recognize outstanding skills, and dedication to diplomacy, team facilitation, and joint achievement in areas where individual aspirations, corporate competition, and organizational rivalry often raise roadblocks to the common good. Karlsson, for whom the award was named, chaired the family of 1301 Metric Mechanical

Standards for Microcomputers until his death in August 1992 (see the *IEEE Standards Bearer*, October 1992).

You are invited to submit nominations for the IEEE Standards Medallion. The IEEE Standards Medallion is awarded for outstanding achievement in the development and implementation of standards within the technologies of the IEEE. Recipients are selected solely on the basis of their accomplishments in standards work. They need to be members of IEEE, and their contributions may be to standards of other national and international standardizing bodies, providing such standards are in the technical fields covered by the IEEE and constitute a significant contribution to the profession. If you need any further information or assistance with awards or recognition for contributions to standards development, please contact Jay Forster, at (408) 370-4202 or by fax at (408) 370-4391.

The IEEE Standards Board formally congratulates the Chairs, Vice Chairs, and Technical Editors listed below as well as their working groups on the publication of their standard.



Alan E. Kollar, Chair; **Gary R. Engmann**, Vice Chair: *IEEE Std 525-1992*, IEEE Guide for the Design and Installation of Cable Systems in Substations

J. E. Stoner, Jr., Chair: *IEEE Std 666-1991*, IEEE Design Guide for Electric Power Service Systems for Generating Stations

David Lee Boneau, Chair; **Harold C. Held**, Major Project Developer: *IEEE Std 776-1992*, IEEE Recommended Practice for Inductive Coordination of Electric Supply and Communication Lines

James F. Mollenauer, Chair, 802.6; **George Clapp**, 802.6 Bridging Subworking Task Group Chair; **Roy Perry**, Editor: *IEEE Std 802.6k-1992*, Supplement to Media Access Control (MAC) Bridges: IEEE Standard 802.6 Distributed Queue Dual Bus (DQDB) Subnetwork of Metropolitan Area Network (MAN).

Bob G. Treece, Chair: *IEEE Std 946-1992*, IEEE Recommended Practice for the Design of DC Auxiliary Power Systems for Generating Stations

Hal Jespersen, Chair: *IEEE Std 1003.2-1992*, IEEE Standard for Information Technology—Portable Operating System Interface (POSIX)—Part 2: Shell and Utilities (includes *IEEE Std 1003.2a*)

W. E. Reid, Chair: *IEEE Std 1036-1992*, IEEE Guide for Application of Shunt Power Capacitors

New Bylaws and Standards Manual Now Available

Working group chairs, liaisons, Standards Coordinating Committees (SCCs) and others by now have received copies of the revised *IEEE Standards Board Bylaws* and the *1993 IEEE Standards Operations Manual*.

These two documents have been extensively revised to replace previous editions of the *IEEE Standards Board Bylaws* and the *IEEE Standards Manual*. The new Bylaws contain long-standing rules under which the IEEE standards process operates, and the Operations Manual contains more active policies and procedures that carry out these rules.

These two documents have been revised to reflect existing practice and reorganized into governing rules and practical policy. It is important that all working groups have these documents on hand to ensure that they are following these policies during the development of their standard.

If you need copies of these documents, contact your staff liaison or Theresa Steenweg at (908) 562-3836. ♦

Norman Schneidewind, Chair: *IEEE Std 1061-1992*, IEEE Standard for a Software Quality Metrics Methodology

Brad Radimer, Chair; **Jim A. McDowall**, Major Project Developer: *IEEE Std 1115-1992*, IEEE Recommended Practice for Sizing Nickel-Cadmium Storage Batteries for Generating Stations and Substations

Thomas Vollman, Chair: *IEEE Std 1209-1992*, IEEE Recommended Practice for the Evaluation and Selection of CASE Tools

Elwood T. Parsons, Chair: *IEEE Std 1301.3-1992*, IEEE Standard for a Metric Equipment Practice for Microcomputers—Convection-Cooled With 2.5 mm Connectors

Robert A. Donnan, Chair; **Robert D. Love**, Technical Editor: *ISO/IEC TR 10738 : 1993* [ANSI/IEEE Std 802.5b, 1993 edition] Information technology—Local and metropolitan area networks—Token ring access method and physical layer specifications—Recommended practice for unshielded twisted pair cable (UTP) for token ring data transmission at 4 Mbit/s

Richard L. Provost, Chair: *IEEE Std C57.12.60-1992*, IEEE Trial-Use Standard Test Procedures for Thermal Evaluation of Insulation Systems for Solid-Cast and Resin-Encapsulated Power and Distribution Transformers

Warren Boxleitner, Chair: *IEEE Std C62.47-1992*, IEEE Guide on Electrostatic Discharge (ESD): Characterization of the ESD Environment

Ralph Showers, Chair; **Donald N. Heirman**, Task Group Chair: *ANSI C63.7-1992* American National Standard Guide for Construction of Open-Area Test Sites for Performing Radiated Emission Measurements



RECENT IEEE STANDARDS PUBLICATIONS



Communications

776-1992 IEEE Recommended Practice for Inductive Coordination of Electric Supply and Communication Lines (ISBN 1-55937-281-8) [SH15883-NUD] \$49.00

Computer

802.6k-1992 Supplement to Media Access Control (MAC) Bridges: IEEE Standard 802.6 Distributed Queue Dual Bus (DQDB) Subnetwork of Metropolitan Area Network (MAN). (1-55937-282-6) [SH15891-NUD] \$15.00

1003.2-1992 (includes IEEE P1003.2a) IEEE Standard for Information Technology—Portable Operating System Interface (POSIX)—Part 2: Shell and Utilities [SH15628-NUD] (1-55937-255-9) \$95.00

1061-1992 IEEE Standard for a Software Quality Metrics Methodology (ISBN 1-55937-277-X) [SH15842-NUD] \$45.00

1209-1992 IEEE Recommended Practice for the Evaluation and Selection of CASE Tools (ISBN 1-55937-278-8) [SH15859-NUD] \$43.00

1298-1992 (AS 3563.1—1991) IEEE Standard Software Quality Management System, Part 1: Requirements (ISBN 1-55937-289-3) [SH15966-NUD] \$35.00

1301.3-1992 IEEE Standard for a Metric Equipment Practice for Microcomputers—Convection-Cooled With 2.5 mm Connectors (ISBN 1-55937-280-X) [SH15875-NUD] \$43.00

10738 : 1993 (ISO/IEC TR) [ANSI/IEEE Std 802.5b, 1993 edition] Information technology—Local and metropolitan area networks—Token ring access mlayer specifications—Recommended practice for unshielded twisted pair cable (UTP) for token ring data transmission at 4 Mbit/s (ISBN 1-55937-273-7) [SH15792-NUD] \$42.50

Power Engineering

525-1992 IEEE Guide for the Design and Installation of Cable Systems in Substations (ISBN 1-55937-291-5) [SH15990-NUD] \$48.00

666-1991 IEEE Design Guide for Electric Power Service Systems for Generating Stations (ISBN 1-55937-145-5) [SH14530-NUD] \$68.50

946-1992 IEEE Recommended Practice for the Design of DC Auxiliary Power Systems for Generating Stations (ISBN 1-55937-283-4) [SH15909-NUD] \$42.00

1036-1992 IEEE Guide for Application of Shunt Power Capacitors (ISBN 1-55937-257-5) [SH15644-NUD] \$49.00

1115-1992 IEEE Recommended Practice for Sizing Nickel-Cadmium Storage Batteries for Generating Stations and Substations (ISBN 1-55937-259-1) [SH15669-NUD] \$35.00

C57.12.60-1992 IEEE Trial-Use Standard Test Procedures for Thermal Evaluation of Insulation Systems for Solid-Cast and Resin-Encapsulated Power and Distribution Transformers (ISBN 1-55937-262-1) [SH15693-NUD] \$35.00

C62.47-1992 IEEE Guide on Electrostatic Discharge (ESD): Characterization of the ESD Environment (ISBN 1-55937-224-9) [SH15271-NUD] \$42.00

C63.7-1992 American National Standard Guide for Construction of Open-Area Test Sites for Performing Radiated Emission Measurements (ISBN 1-55937-290-7) [SH15982-NUD] \$35.00

To order IEEE Standards Publications, please call (800) 678-IEEE. Outside the US and Canada, call (908) 981-1392.

Public OUI Assignment List Available

Users of local area networks (LANs) and metropolitan area networks (MANs) and of standards involving company identifiers can benefit from a publicly available registry of organizationally unique identifier (OUI) assignments. Such a public registry can facilitate LAN/MAN management as well as the general administration and use of company identifiers.

An initial list of OUI assignments has been compiled and quarterly updates to this listing will be available as an auto-retrievable text file via anonymous ftp. To receive the full listing, simply send an E-mail to info.stds.oui@ieee.org. No internal message is necessary with the E-mail to that address. An inquirer may also retrieve this listing by anonymous ftp from <ftp://ftp.ieee.org> as

ieee/info/info.stds.oui. The posting date will be in the body of the file.

It is important to recognize that this is a partial listing, as not all firms assigned an OUI have elected to make their official IEEE OUI assignment public at this time. The firms and numbers listed may not always be obvious in product implementations, as some manufacturers subcontract component manufacture and others include registered firm OUIs in their products.

The three-octet OUI can be used to generate Universal LAN Media Access Control (MAC) addresses and Protocol Identifiers in accordance with IEEE Std 802-1990 for use in LAN/MAN network applications.

For company identifier applications, IEEE Std 896.2-1991, *IEEE Standard Backplane Bus Specification for Multiprocessor Architectures: Futurebus+* and IEEE Std 1212-1991, *IEEE Standard*

Control and Status Register (CSR) Architecture for Microcomputer Bus describe how to add a self-assigned extension to form a machine-readable globally unique identifier for your company's products. Additional standards are forthcoming.

If your firm manufactures or plans to manufacture products using ISO/IEC 8802 standards, you should apply to IEEE for your firm's OUI. The IEEE has been designated by the International Organization for Standardization (ISO) Council to act as the Registration Authority for the implementation of International standards in the ISO/IEC 8802 series. This is the single worldwide source of registered OUIs.

For further details, contact: IEEE Registration Authority, IEEE Standard Department, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, phone: (908) 562-3813, fax: (908) 562-1571, E-mail: i.ringel@ieee.org. ♦

Registration Authority: What Is It, and Who Needs It?

by Gary S. Robinson

There are multiple types of registration in the world that affect everyone, even though the majority of people never stop to think of it. If you are building a new house on a street, you will know the address of the house because the street name has been assigned by some authority, the "registration authority." The number will follow some defined rule, such as next odd or even number from the lot next to you counting from the south, which is "self-registration." There is also another type of registration, where all values are predefined in a document, such as ZIP codes. You find out your value by looking it up in a list.

Generally, registration defines unique identifiers for physical locations or data objects. The IEEE Registration Authority Committee (RAC) is involved in all types of registration activity related to information technology standards. The RAC can provide a base of experience that can act as a clearinghouse for all registration, IEEE and non-IEEE, so that everyone is sure they are not duplicating work already done.

Some Standards Developing Committees (SDCs) may try to use registration because they think it will be easy. Unfortunately, that isn't the case. To write a registration procedure and to find a proper registration authority is very difficult and should not be undertaken unless absolutely necessary. If the RAC is made aware of the issue at an early stage in a standards effort (preferably at the time of Project Authorization Request approval), it can explain to the SDC just how difficult this task is. The single issue of liability of the registration authorities should be enough

to discourage its use.

However, when an SDC understands the work involved and still intends to use registration, the RAC can then investigate the issues and work with the SDC to determine if the process they wish to use is reasonable, whether it can be done better through someone else's registration authority, etc. The RAC also reviews the SDC's documents in the area of registration so that everyone is aware of what is happening when it is happening. Then RAC can cross-pollinate registration issues across all of the IEEE and non-IEEE communities.

When the documents are completed, the RAC can approve the proposed registration authority, if one is required, to be sure it meets the IEEE guidelines and, if necessary, the ISO/IEC JTC1* directives. The final and continuing step is for the RAC to answer all comments, complaints, and questions for the IEEE as registration authority.

If you have questions about the Registration Authority Committee, contact Anne O'Neill, Standards Department (a.oneill@ieee.org; (908) 562-3809). ♦

Gary S. Robinson is Vice President of Standards for the IEEE Computer Society and a member of the IEEE Standards Board.

*Joint Technical Committee 1, on Information Technology, of the International Organization for Standardization and the International Electrotechnical Commission.

100 Mb/s Higher Speed LAN Study

Baltimore, MD, March, 12, 1993—The IEEE's Project 802 Local Area Network (LAN) and Metropolitan Area Network (MAN) Standards Committee, under the auspices of the IEEE Computer Society, met in plenary session this week. Significant interest in higher speed LAN operation was evident throughout the meeting. Study-group participants explored in depth transmission systems issues, collision detection schema, Demand/Priority analysis, application requirements, and a host of additional topics.

This higher speed study is being done in one group at this time to take advantage of all available expertise to determine the most feasible technologies to satisfy 100 Mb/s functionality for what both user and vendor communities agree is an important standards effort. The carrier sense multiple access with collision detection (CSMA/CD) media access control (MAC) compatible and Demand/Priority approaches, among others, are under intensive consideration. It is anticipated that with this week's progress and further evaluation at the May 18-20 interim meeting in Boston, the study will result in resolution of the major concerns, as identified above, no later than the July 1993 P802 plenary meeting.

As evidenced by the attendance of close to 200 people at the study-group meeting, there is solid interest and commitment to the higher speed LAN subject. Over 20 technical presentations were made this week with substantial dialog and in-depth probing of the issues and solution. Should adequate justification, need, and feasibility be established in July for two major projects, then an additional working group within P802 would likely be established.

Past experience shows that technical thoroughness in the early phases of an emerging project leads to more rapid development of the eventual specification. The P802 community is well aware of the broad-based industry interest in 100 Mb/s LAN developments and is determined to press forward toward quality standardization in the shortest feasible time. For further information, contact:

Patricia Thaler

Hewlett-Packard Co.

Phone (916) 785-4538; fax (916) 786-9185 or

Peter Tarrant

SynOptics Communications, Inc.

Phone (408) 764-1217; fax (408) 988-5525.

IEEE STANDARDS BOARD ACTIONS

APPROVED PARs FOR NEW STANDARDS

P1003.15a (C/OS) Standard for Information Technology—Portable Operating System Interface (POSIX)—Part 2: Shell and Utilities—Amendment: Batch Environment

P1003.21 (C/OS) Standard for Information Technology—Portable Operating System Interface (POSIX)—Part 1: System Application Programming Interface (API)—Amendment: Real-Time Distributed Systems Communications

P1003.22 (C/OS) Guide to the POSIX Open Systems Environment—A Security Framework

P1101.7 (C/BA) Standard for Space Applications Module, Extended Height Format E Form Factor—Mechanical

P1232.1 (SCC20) Trial-Use Standard Data and Knowledge Specifications for Artificial Intelligence and Expert System Tie to Automatic Test Equipment (AI-Estate)

P1232.2 (SCC20) Trial-Use Standard Service Specifications for Artificial Intelligence and Expert System Tie to Automatic Test Equipment (AI-Estate)

P1333 (PE/IC) Guide for Installation of a Cable Using the Guided Boring Method

P1341 (C/BA) Recommended Practices for Multimedia Extensions to Bus Architectures

P1342 (C/BA) Guide for Bus Architecture Modeling for Standards Developers

P1346 (IA/SCC22) Guide for Electric Power System Compatibility with Industrial Control Devices, Including Programmable Logic Controllers (PLCs) and Adjustable Speed Drives (ASDs)

P1347 (SCC20) Trial-Use Guide for the Understanding of the Artificial Intelligence and Expert System Tie to Automatic Test Equipment (AI-Estate)

P1348 (C/SE) Recommended Practice for the Adoption and Integration of CASE Tools

P1349 (IA/P&CI) Guide for Application of Electric Motors in Class 1 Division 2 Hazardous (Classified) Locations

P1350 (PE/TR) Guide for Protection of Distribution Transformers With Emphasis on Secondary (Low-Voltage) Side Surges

P1355 (C/BA) Standard for Heterogeneous Interconnect (HIC), (Low Cost, Low Latency, Scalable, Serial Interconnect for Parallel System Construction)

P1356 (C/BA) Standard Profile for Multiprotocol Plug-In Modules Supporting Asynchronous Transfer Mode (ATM)

P1357 (C/BA) Standard for Logical Interconnection for Multi-protocol Plug-In Modules Supporting Asynchronous Transfer Mode (ATM)

APPROVED PARs FOR STANDARDS REVISIONS

P242 (IA/PS) Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems

P855 (C/MM) Standard for Microprocessor Operating System Interfaces (MOSI)

P1057 (IM/WM&A) Standard for Digitizing Waveform Recorders

P1125 (PE/IC) Guide for Moisture Measurements and Control in SF₆ Gas-Insulated Equipment

PC95.1 (SCC28) Standard for Safety Levels With Respect to Human Exposure to Radio Frequency Fields, 3 kHz to 300 GHz

REVISED PARs

P1232 (SCC20) Standard for Artificial Intelligence and Expert System Tie to Automatic Test Equipment (AI-Estate)

P1275 (C/BA) Standard for Boot (Initialization Configuration) Firmware, Core Requirements and Practices

P1754 (C/MM) Standard for a 32-bit Microprocessor Architecture

PC57.130 (PE/TR) Guide for Use of Dissolved Gas Analysis During Factory Thermal Tests for the Evaluation of Oil-Immersed Transformers and Reactors

WITHDRAWN PARs

P337 (AES/GAP) Standard Specification Format Guide and Test Procedure for Linear, Single-Axis, Pendulous, Analog Torque Balance Accelerometer

P416 (SCC20) ATLAS Test Language

P1238.1 (C/COS) Standard for Information Technology—OSI Applications Program Interfaces—Common Connection Management and Supporting Functions

APPROVAL OF NEW STANDARDS

610.13 (C/SCC) Standard Glossary of Computer Languages

817 (PE/IC) Standard Test Procedure for Flame Retardant Coatings Applied to Insulated Cables in Cable Trays

P1061.1 (C/SE) Guide to Software Design Description

1160 (NPS/NI&D) Standard Test Procedures for High-Purity Germanium Crystals for Radiation Detectors

1164 (C/DA) Standard Multi-Value Logic System for VHDL Model Interoperability

1205 (PE/NPE) Guidelines for Assessing, Monitoring, and Mitigating Aging Effects on Class 1E Equipment Used in Nuclear Power Generating Stations

1224 (C/OS) Standard for Information Technology—Open Systems Interconnection (OSI) Abstract Data Manipulation—Application Program Interface (API) [Language Independent]

1224.1 (C/OS) Standard for Information Technology—X.400 Based Electronic Messaging Application Program Interface (API) [Language Independent]

1224.2 (C/OS) Standard for Information Technology—Directory Services Application Programming Interface (API) [Language Independent]

1264 (PE/SUB) Guide for Animal Deterrents for Electric Supply Substations

1278 (C/SCC) Standard for Information Technology—Protocols for Distributed Interactive Simulation Applications Entity Information and Interaction

1291 (PE/SWG) Guide for Partial Discharge Measurements in Power Switchgear

1301.2 (C/BA) Recommended Practices for the Implementation of a Metric Equipment Practice (IEEE 1301)

1326 (C/OS) Standard for Information Technology—Test Methods for Measuring Conformance to Open Systems Interconnection (OSI) Abstract Data Manipulation—Application Program Interface (API) [Language Independent]

1326.1 (C/OS) Standard for Information Technology—Test Methods for Measuring Conformance to X.400 Based Electronic Messaging—Application Program Interface (API) [Language Independent]

1326.2 (C/OS) Standard for Information Technology—Test Methods for Measuring Conformance to Directory Services Application Programming Interface (API) [Language Independent]

1327 (C/OS) Standard for Information Technology—Open Systems Interconnection (OSI) Abstract Data Manipulation C Language Interfaces—Binding for Application Program Interface (API)

1327.1 (C/OS) Standard for Information Technology—X.400 Based Electronic Messaging C Language Interfaces—Binding for Application Program Interface (API)

1327.2 (C/OS) Standard for Information Technology—Directory Services C Language Interfaces—Binding for Application Programming Interface (API)

1328 (C/OS) Standard for Information Technology—Test Methods for Measuring Conformance to Open Systems Interconnection (OSI) Abstract Data Manipulation C Language Interfaces—Binding for Application Program Interface (API)

1328.1 (C/OS) Standard for Information Technology—Test Methods for Measuring Conformance to X.400 Based Electronic Messaging C Language Interfaces—Binding for Application Program Interface (API)

1328.2 (C/OS) Standard for Information Technology—Test Methods for Measuring Conformance to Directory Services C Language Interfaces—Binding for Application Programming Interface (API)

APPROVAL OF REVISED STANDARDS

145 (AP/A) Standard Definitions of Terms for Antennas

260.3 (SCC14) Standard Mathematical Signs and Symbols for Use in Physical Sciences and Technology

ACRONYMS

AES/GAP	Aerospace & Electronic Systems/Gyro & Accelerometer Panel
AP/A	Antennas & Propagation/Antennas
C/BA	Computer/Bus Architecture
C/CC	Computer/802 LAN/MAN
C/DA	Computer/Design Automation
C/MM	Computer/Microprocessor & Microcomputer
C/OS	Computer/Operating Systems and Application Environments
C/SCC	Computer/Standards Coordinating Committee
C/SE	Computer/Software Engineering
C/TT	Computer/Test Technology
COM/TRAN-	Communications/Transmission
SACC	Access Committee
DEI/RE	Dielectrics and Electrical Insulation/Radiation Effects
EMC/SC	Electromagnetic Compatibility/Standards Committee
IA/P&CI	Industry Applications/Petroleum & Chemical Industry
IA/PS	Industry Applications/Power Semiconductor
IA/SCC22	Industry Applications/Standards Coordinating Committee 22 (Power Quality)
IM/WM&A	Instrumentation & Measurement/Waveform Measurement and Analysis
NPS/NI&D	Nuclear & Plasma Sciences/Nuclear Instruments & Detectors
PAR	Project Authorization Request
PE/EM	Power Engineering/Electric Machinery
PE/IC	Power Engineering/Insulated Conductors
PE/NPE	Power Engineering/Nuclear Power Engineering
PE/PSE	Power Engineering/Power System Engineering
PE/PSR	Power Engineering/Power System Relaying
PE/SUB	Power Engineering/Substations
PE/SWG	Power Engineering/Switchgear
PE/TC	Power Engineering/Technical Council
PE/TR	Power Engineering/Transformers
SCC4	Standards Coordinating Committee 4 (Electrical Insulation)
SCC14	Standards Coordinating Committee 14 (Quantities, Units & Letter Symbols)
SCC20	Standards Coordinating Committee 20 (ATLAS)
SCC28	Standards Coordinating Committee (Non-ionizing Radiation)

802.5m (C/CC) Standard for Local and Metropolitan Area Networks: Media Access Control (MAC) Bridges: Appendix C, SRT Bridge Operation, and Appendix D, PICS Proforma for SRT Bridge Operation (revision to IEEE Std 802.1D-1990)

858 (PE/PSE) Standard Definitions in Power Operations Terminology

C37.013 (PE/SWG) Standard for AC High Voltage Generator Circuit Breakers Rated on a Symmetrical Current Basis

C37.013 (PE/SWG) Standard for AC High Voltage Generator Circuit Breakers Rated on a Symmetrical Current Basis, Section 6—Application Guide

C37.40 (PE/SWG) Standard Service Conditions and Definitions for High-Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches, and Accessories

C57.12.90 (PE/TR) Standard Test Code for Liquid-Immersed Distribution, Power and Regulating Transformers, and Guide for Short-Circuit Testing of Distribution and Power Transformers

C57.109 (PE/TR) Guide for Liquid-Immersed Transformer Through-Fault-Current Duration

REAFFIRMED STANDARDS

98 (SCC4) Standard for Preparation of Test Procedures for the Thermal Evaluation and Establishment of Temperature Indexes of Solid Electrical Insulating Materials

139 (EMC/SC) Recommended Practice for the Measurement of Radio Frequency Emission From Industrial, Scientific and Medical (ISM) Equipment Installed on User's Premises

213 (EMC/SC) Standard Procedure for Measuring Conducted Emissions in the Range of 300 kHz to 25 MHz From Television and FM Broadcast Receivers to Power Lines

376 (EMC/SC) Standard for the Measurement of Impulse Strength and Impulse Bandwidth

1312 (PE/TC) Standard for Preferred Voltage Ratings for Alternating-Current Electrical Systems and Equipment Operating at Voltages Above 230 kV Nominal

1313 (PE/TC) Standard for Power Systems—Insulation Coordination

WITHDRAWN STANDARDS

97-1969 (SCC4) IEEE Standard Recommended Practice for Specifying Service Conditions in Electrical Standards

268A-1987 (SCC14) IEEE International System of Units Conversion Factors Card

295-1969 (MAG/ETTC) IEEE Standard for Electronics Power Transformers

416-1984 (SCC20) IEEE Standard ATLAS Test Language

816-1987 (PE/IC) IEEE Guide for Determining the Smoke Generation of Solid Materials Used for Insulations and Coverings of Electric Wire and Cable

859-1987 (PE/PSE) IEEE Standard Terms for Reporting and Analyzing Outage Occurrences and Outage States of Electrical Transmission Facilities

1084-1986 (C/SCC) IEEE Standard Glossary of Mathematics of Computing Terminology

IEEE Standards Board June Meetings to be in Montreal

The IEEE Standards Board will go to Montreal, Canada, for its June 1993 meeting, announced Wallace Read, Vice President of Standards at the March meeting.

In recent years, open forums have been held on the evening prior to the Board meeting to allow open discussion of a broad range of critical issues related to standards. The theme of the Montreal forum will be "Cultivating International Partnerships in the Standards-Writing World." Experts from several countries are expected to describe the trends in the development of internationally acceptable standards. The forum is sure to provide a lively discussion of the complex issues that face IEEE and other standards-development organizations as they strive to provide quality standards for the world market.

One of the IEEE's primary goals for 1993 is to increase the worldwide use of IEEE standards. This meeting is intended to help meet this objective by creating a visible presence for the Board outside of the US.

The meeting will be held in Montreal from June 15-17. For further details, contact Terry deCourcelle at (908) 562-3807.

COMING IN MAY...

National Electrical Safety Month

Several electrical industry associations have lent their support to making this May into National Electrical Safety Month. The campaign's primary sponsors are the National Electrical Manufacturers Association (NEMA), the US Consumer Product Safety Commission (CPSC), and Underwriters Laboratories, Inc. (UL). The IEEE National Electrical Safety Code is a contributing organization among 13 other organizations.

The 1993 "Plug Into Electrical Safety" message is aimed at promoting consumer awareness of electrical safety, specifically relating to the use of plugs, cords, and outlets.

The sponsors will launch National Electrical Safety Month with a news conference on April 29 at the National Press Club in Washington, DC. CPSC chairperson Jacqueline Jones-Smith, UL President Tom Castino, and Malcolm O'Hagan will stress the importance of consumer electrical safety education.

For further information, contact NEMA Public Relations at (202) 457-8455.

Creative Proposal Funds Scholarships

IEEE Standard Project 1394, A High-Performance Serial Bus, may help fund the education of future engineers. Sponsored by the Microprocessors and Microcomputers Standards Committee of the IEEE Computer Society, the proposed standard will require users to license a set of patents in order to implement the standard. In accordance with IEEE Standards Patent Policy, these patents must be made available on a nondiscriminatory basis and at a reasonable cost.

Apple Computer, Inc. has created a \$7500 license agreement proposal that provides a unique fee-reduction option. If a company demonstrates that it donates a minimum of \$2000 to the IEEE Foundation, its license fee would be reduced to \$5000. This plan encourages contributions to fund IEEE undergraduate scholarships. The working group anticipates finalizing their document and submitting it for Standards Board approval late this year.

IEEE STANDARD IN THE SPOTLIGHT:

Human Exposure to RF Electromagnetic Fields

by L. John Rankine

In the past year, IEEE's standardization activities have come under intense media and governmental scrutiny. After reports last summer on CBS's *60 Minutes* and in newspapers, the US Senate held hearings on the issue of radar guns as a possible cause of testicular cancer among police officers. Recently, there have been numerous reports in the media concerning cellular phones as a possible cause of brain tumors. At the center of the debates is IEEE Std C95.1-1991, *IEEE Standard for Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields 3 kHz to 300 GHz*. This standard presents rules for safe exposure to radio-frequency energy over most of the frequency range of non-ionizing radiation.

Several lessons have emerged from the IEEE's experiences to date. The first is that while we pride ourselves as professionals who are sincerely focused on technical matters, we can quickly, like it or not, find ourselves in the middle of emotionally and politically charged debates under the spotlight of the media. The second is that public understanding of IEEE's standardization activities is low. As the representative of the IEEE Standards Board, I explained at the Senate Hearing that IEEE Std C95.1 is *not* a product standard, nor does IEEE certify products. This came as a surprise. I further explained that IEEE provided the forum for bringing together over a period of eight years the 125 scientists, engineers, and researchers involved in the development, maintenance, and updating of the C95.1 standard.

Because we stuck to explaining the consensus standardization process and the thoroughness with which it was conducted,

IEEE came out of the hearings very well indeed. IEEE would take no sides in the debate as to whether or not products were safe or unsafe, or whether one medical opinion was superior to another. As a result, IEEE earned the respect of the

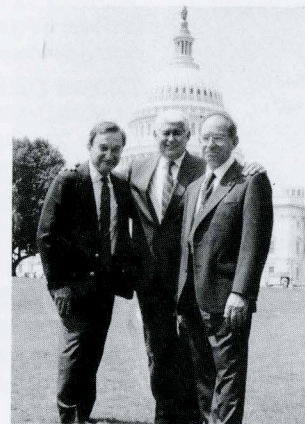
Committee's chair as being one of the more impartial sources of information available to the Committee. Furthermore, we pointed out that the standard, like all IEEE standards, is a living document, which changes as new findings become available. Finally, we stated our support for continuing research on bio-effects across the entire frequency spectrum and recommended that the scientific and medical communities in conjunction with the involved

federal agencies and the National Academies should determine the research priorities and ensure quality research.

Andrew Salem, Secretary of the IEEE Standards Board; Dr. John Osepchuck, Secretary of Standards Coordinating Committee 28 (SCC28) on Non-ionizing Radiation; the IEEE Standards staff; and IEEE Public Relations all played major roles in shaping our approach. Anyone who gets drawn into the public debate on this and similar issues is encouraged to contact IEEE Public Relations for assistance.

IEEE has taken essentially the same path in dealing with the media in the current furor over cellular phones, and once again, it has proven to be the best way to position our standards work properly and, at the same time, shed light on this and similar issues that will continue to bring our work under public scrutiny. ♦

L. John Rankine is a member of the IEEE Standards Board.



John Osepchuck, John Rankine, and Andy Salem in Washington for US Senate Hearings on the perceived health effects of traffic radar guns.

CALENDAR OF EVENTS

May

- 2-6 **Industrial & Commercial Power Systems Technical Conference**
(Industry Applications Society)
St. Petersburg, FL
contact—Jim Beall
(813) 376-2790
- 3-5 **US TAG for ISO/IEC JTC1/SC7 meeting**
Pittsburgh, PA
contact—Leonard Tripp, Boeing,
MS 6Y-07, P.O. Box 24346,
Seattle, WA 98124;
(204) 477-3326
- 3-6 **Switchgear Committee**
(Power Engineering Society)
San Francisco, CA
contact—J. H. Brunke
(503) 230-4431
- 7 *Deadline for draft and PAR submission for June Standards Board meeting*
- 7-9 **Industrial & Commercial Power Systems seminar**
(I&CPS Conference)
St. Petersburg, FL
contact—T. Argiropoulos
(908) 562-3805
- 9-13 **Substations Committee**
(Power Engineering Society)
Atlanta, GA
contact—M. L. Holm
(503) 230-3063
- 19 **Computer Society Standards Activity Board and International Computer Software Engineering**
Baltimore, MD
contact—Linda Bailey
(202) 371-0101 or
l.bailey@compmail.com
- 27-28 **C63.4 Radio-Noise Emissions seminar**
(Federal Communications Commission)
Dorsey, MD
contact—T. Argiropoulos
(908) 562-3805

June

- 15-16 **IEEE Standards Board Committee meetings**
Montreal, Canada
contact—Terry deCourcelle
(908) 562-3807
t.decourcelle@ieee.org
- 17 **IEEE Standards Board meeting**
Montreal, Canada
contact—Terry deCourcelle
(908) 562-3807 or
t.decourcelle@ieee.org
- 17 **US TAG for ISO/IEC JTC1/SC26 meeting**
Montreal, Canada
contact—Clyde Camp, Chair US TAG for JTC1/SC26, Texas Instruments, 2313 Merimac Drive, Plano, TX 75075;
(214) 995-0407

July

- 11, 15, 16 **US TAG for ISO/IEC JTC1/SC22/WG15 meeting**
Denver, CO
contact—R. L. Pritchard, IEEE TAG Administrator, c/o IEEE Standards Department, Piscataway, NJ or (212) 517-9446
- 12-16 **P802 Committee meeting**
(Computer Society)
Denver, CO
contact—Classic Consulting
(604) 931-7600
- 12-16 **POSIX meeting** (Computer Society)
Denver, CO
contact—Judy Williams
(415) 591-8995
- 18-22 **Power Engineering Society Summer meeting**
Vancouver, BC, Canada
contact—B. G. Prior
(604) 528-2736
- 19-23 **Bus Architecture Standards Committee (BASC) meeting**
(Computer Society)
Seattle, WA
contact—Harrison Beasley
(214) 997-3431 or
h.beasley@ieee.org

August

- 6 *Deadline for draft and PAR submission for September Standards Board meeting*
- 9-13 **C63 and Subcommittee meetings**
Dallas, TX
contact—Luigi Napoli
(908) 562-3812 or
l.napoli@ieee.org
- 9-13 **EMC Symposium**
Dallas TX
Contact—Joe Stanfield
(214) 690-9881
- 16-17 **C63.4 Radio-Noise Emissions Seminar** (EMC Symposium)
Dallas, TX
contact—T. Argiropoulos
(908) 562-3805
- 30-31 **US TAG for ISO/IEC JTC1/SC7 meeting**
Seattle, WA
contact—Leonard Tripp, Boeing,
MS 6Y-07, P.O. Box 24346,
Seattle, WA 98124 (204) 477-3326

September

- 9-11 **Industrial & Commercial Power Systems seminar**
(PCIC Symposium)
St. Louis, MO
contact—T. Argiropoulos
(908) 562-3805
- 13-15 **Petroleum & Chemical Industry Conference**
St. Louis, MO
contact—Hal Dygert
(314)-997-1515
- 13-15 **IEEE Standards Board Committee meetings**
Piscataway, NJ
contact—Terry deCourcelle
(908) 562-3807 or
t.decourcelle@ieee.org
- 16 **IEEE Standards Board meeting**
Piscataway, NJ
contact—Terry deCourcelle
(908) 562-3807 or
t.decourcelle@ieee.org

