IEEE STANDARDS BEARER

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IEEE STANDARDS

IEEE Evolves to Meets 21st Century Needs

by Donald C. Fleckenstein

Early in 1992, the IEEE Board of Directors undertook the development of a strategic plan for the Institute. The plan, "Meeting Member Needs in the 21st Century," was adopted in 1993, and included among its goals the improvement of the IEEE's organizational structure. A retreat was held in June of 1994 to develop the design specifications for a new IEEE organization. A January 1995 gathering of 100 IEEE members, representing the varied interests of the membership, developed three scenarios for organizational improvement. Following review and comments on the scenarios, two were presented to the major boards during the November–December 1995 period.

At the December 1995 Standards Board Meeting, the Board considered these two scenarios, and endorsed a motion for change, supporting the purpose and intent of organizational improvement; however, it did not select one of the two scenarios over the other.

Concurrently, at the same December meeting, the IEEE Board of Directors authorized moving forward with the first step of one of the two proposed scenarios. This action by the Board of Directors further authorized the major boards to undertake organizational initiatives. The Board established an Implementation Committee for Structural Reorganization, and a timetable for having all the necessary changes to the Institute's Bylaws. In addition, the Bylaws of all major boards are targeted for approval at the Board's December 1996 meeting.

The Board recognized the opportunity to position itself to meet the requirements that the approaching century would clearly demand, and continued its discussion by endorsing a set of principles to be incorporated into any organizational change for the IEEE Standards Activity. These principles addressed such key matters as responsiveness to global market issues, programs that would support industry needs, and an increased emphasis on standards leadership in the governance of the IEEE Standards program of the future. Thus was born the standards initiative, with the working title: Standards Board 21.

Standards Board 21 met the first milestone (15 March) by submitting a proposed revision to the IEEE Bylaws that would enable the creation of a semi-autonomous IEEE-Standards Association (IEEE-SA). The proposal was presented to the Standards Board for review and discussion at its March meeting in Somerset, NJ. In early April, the Standards Board Advisory Committee reviewed the Board's comments, and subsequently submitted a revision to the proposed changes to IEEE Bylaw 309. This second submission specified the creation of a membership association, consisting of member grades covering IEEE members, Society Affiliates, Organizational members, Corporate members, and non-IEEE individual members. It is estimated that participation fees will entitle members to certain privileges. Also, the identification of this constituency will facilitate election of the membership of the proposed governing body of the Standards Association, the Board of Governors. The profile of this constituency now represents a solution to

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IEEE Region 9, Latin America: ¡Salud a la organization!

by Anne O'Neill

Effectively utilitizing the technical expertise of IEEE was the underlying theme of Region 9's seminar, 26–29 March in Costa Rica. Region 9 encompasses 23 sections in Central and South America. Representatives of each of IEEE's five major boards also participated in this year's meeting.

The annual winter seminar orients new officers to the IEEE organization and enables leaders to share their concerns and solve problems.

The IEEE Distinguished Lecturer's Program is one technical resource many sections in Region 9 use to keep their local meetings vital. Section leaders have also used the listing from the Lecturer's Program to identify consultants for their governments to seek advice on restructuring both the telecommunications and electric utilities industries.

The Distinguished Lecturer's Program is offered by most societies through their respective technical boards. An auto-retrievable file listing information on the Distinguished

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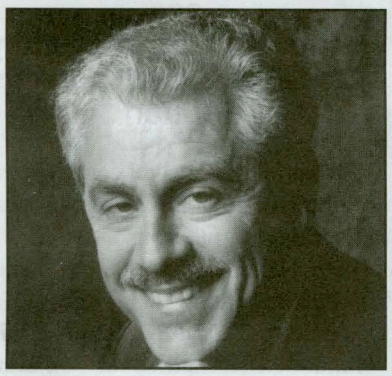
A Vision for IEEE Standards Activities

by Dan Senese, IEEE General Manager



The IEEE staff vision is to become the best staff of any professional society in the world. An organization as prestigious as the IEEE deserves no less. We are tracking our progress toward this goal by measuring our member, volunteer, and customer satisfaction levels, our financial results, and our employee morale. We call these measures our "Measures of Success."

One of our goals is to strengthen our already strong volunteer and staff partnership, and together lead the standards industry in areas of expertise. Since my arrival at the Institute, I continue to be more and more impressed with the importance and success of our IEEE Standards Activities. We have gained the respect of the user community, government, and industry world-wide because of the integrity and openness of our process.

Becoming and staying the best requires at least continuous improvement and most often, dramatic improvement with the prudent introduction of new technology. Improvements require a focus on the customer and a passion for ever-improving levels of service. I know of no better method of accomplishing these improvements than through the rigorous adoption of process management and process re-engineering techniques. The standards customers are demanding faster standards cycle times, while competitive technological advancements are being developed at faster rates. I challenge the IEEE standards community to rethink our standards process with the goal of reducing the cycle time by a factor of at least four. Some questions to ask when proposing new processes are: Is it the best that it can be? Will it meet the future needs of industry in the global marketplace with its increasing competitive pressures?

The output of this effort should include a multi-year plan that defines the path forward. Our staff is prepared to partner with the standards volunteer leadership in dramatically improving our standards processes. We invite you to provide input to Standards Activities to take us to this end. ◆

Dan Senese is the General Manager, and a member of IEEE. He began working at the IEEE in September 1995.

WHAT'S INSIDE

IEEE

Message From The Chair

by Donald Loughry

We live in a world where instant communications on a global scale impacts and changes the way we think and behave. Recently I attended a "Summit 2001" conference in California, where 40 sites throughout the state were tied together live via satellite video hook-up to discuss the future of the state's educational system. Company chief executive officers from local high-tech companies, U.S. Vice President Al Gore, state educators, and many others probed the issues in interactive debate. The insights, excitement, and motivation were amazing. We are at the brink of the information age! Now what does this have to do with standards? The CEOs mentioned standards, and some of them were IEEE standards. The facilities folks used standards...lots of them. And, pardon the pun, the notion of "standards of excellence" in the educational domain was much in the air.

As we move forward toward the 21st century, the need for and use of international standards plays an ever-increasing role in our daily life. Multinational companies and even national companies marketing on a multinational basis want to produce and ship one product type rather than one for each country. Over the past year, IEEE has published numerous standards at the international level. We now have guidelines for how it is that IEEE folks around the globe interact with both IEC and ISO/IEC JTC 1 standards bodies. As this article rolls off the press, the IEEE P802 LAN/MAN Standards Committee will be meeting in Enschede, Netherlands. This year we are interacting with Region 9 (Latin America), a major focus not only for the Board of Directors meeting in Buenos Aires this August, but also for the possibilities of greater linkages and leverage in several standards arenas. Antonio Bostos, Region 9 Director, is very supportive of this development. And, of course, the Standards Board 21 program has as a major goal the underlying principle to "increase regional representation in the governance and direction of the IEEE Standards Program." One of my constant reminders is the notion of T.G.I.F., which for some means "Thank Goodness It's Friday." I would encourage us all to reflect on the theme "Think Global, It's Fruitful!" ◆

Editor's Notes

These are exciting times at IEEE and at IEEE Standards. In response to the IEEE Board of Director's charge for the major boards to undertake organizational improvements, in late 1995 the IEEE Standards Board launched Standards Board 21 — a series of initiatives and principles that are responsive to worldwide standards issues and maximize the significance of IEEE Standards activities in the marketplace of today...and of the future.

On 20 June the Standards Board officially endorsed the proposed formation of an IEEE Standards Association—a semi-autonomous organization in which the Standards Board can improve the effectiveness of its oversight of the standards process.

These efforts go hand-in-hand with the IEEE staff vision to become the best staff of any professional society in the world. Dan Senese, IEEE General Manager, addresses his vision for the IEEE and how it ties into IEEE Standards in his article "A Vision for IEEE Standards Activities." As Dan states, "Becoming and staying the best requires at least continuous improvement and most often, dramatic improvement with the prudent introduction of new technology."

Along with these new initiatives, IEEE Standards is making an ongoing effort to expand international participation in the IEEE Standards Program. In late March, representatives of IEEE's major boards, including the Standards Board, participated in Region 9's annual meeting in Costa Rica. Here Region 9 new officers and Standards representatives got a chance to share their thoughts and concerns about standards development and use. This on-going interaction meets one of the underlying principles of Standards Board 21 to increase regional representation and participation in the IEEE Standards Program.

In this issue of the *IEEE Standards Bearer,* we also take a look at the issue of developing standards in IEEE if the goal is to harmonize standards with the International Electrotechnical Commission (IEC). And we're pleased to announce the availability of a new guide on international standards development, *IEEE Standards Board International Committee (IntCom) Guides to Developing Standards in Parallel with Other Standards-Developing Organizations—Guide #2.*

We're also pleased to announce the publication of the *1997 National Electrical Safety Code*, available 1 August, 1996! Please look inside the issue for more details and ordering information.

If you access the *IEEE Standards Bearer* on-line and would like to discontinue receiving printed versions or need to update your mailing address, please let us know. You can provide us with this information by e-mail: stds-maillst@ieee.org or call (908) 562-3800.

Look out for the next edition of the *IEEE Standards Bearer*—it will include the highlights of the September Standards Board meetings. Enjoy the issue...and the rest of the summer! ◆

Board Actions News Flash

Reported by L. Bruce McClung, IEEE Standards Board Seminar Committee Chair

The IEEE Standards Board meeting took place in Montreal, Canada during the week of 18 June. The following highlights some important actions:

- From now on, the Review Committee (RevCom) will require only 20 copies of standards to be submitted for review. Note that after the September meeting, the New Standards Committee (NesCom) will accept only the 1996 PAR form.
- The Standards Board Forum was a practice session for four of the seven new standards training module presentations. Thanks to Standards Board members Gilles Baril, Don Loughry, Clyde Camp, and Al Kiener who presented the International Standards Arena, the Role of the Staff Project Editor, the Project Authorization Request (PAR) form, and Writing Working Group Procedures. All volunteer standards leaders are encouraged to use these presentations, which are available in Power Point via ftp://stdsbbs.ieee.org/training/. See the FAQ's on our www site (http://stdsbbs.ieee.org/) for more details.
- Ivor Knight, Program Manager of the Intelligent Transportation Systems grant, reported on project plans underway in SCC32. PARs have been submitted for many of the message sets required to support this Federal Highway Administration Program. ◆

STANDARD BEARER

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Gigabit LANS on the Horizon

The Computer Industry is experiencing an explosion of new networking and interconnect strategies that operate at or near one gigabit per second. Super HIPPI, IEEE 1394.1, IEEE 802.12, and IEEE 802.3 all have project underway to define interconnects at this speed, and there are other alternatives being developed outside the ANSI and IEEE standards organizations as well. This heightened level of activity is being driven by technical and economic feasibility, as well as a real market need.

Some may question why so many choices in standards should exist. The answer is that rather than force suppliers and consumers to abandon their favorite technology, they should be allowed a compatible upgrade path, on the assumption that they have already analyzed the applications, the trade-offs, and decided upon which technology they prefer. The following two articles provide descriptions of the higher speed projects being conducted in 802.3 and 802.12.

IEEE 802.3

by Howard Frazier

The 802.3 Working Group of the IEEE 802 LAN/MAN Standards Committee (LMSC) has begun work on a project known as "Gigabit Ethernet," which is a 1000 Mb/s extension of the 802.3 Carrier Sense Multiple Access with Collision Detection (CSMA/CD) based Local Area Network standard. The 802 LMSC approved a Project Authorization Request (PAR) for this activity in March of this year.

The project, which is expected to be designated as P802.3z, will build on the Working Group's experience in scaling the 802.3 standard to higher speeds, as reflected in the publication of the 100BASE-T standard (IEEE Std 802.3u-1995), which extended the operating speed of CSMA/CD networks to 100 Mb/s. The new project will also make use of the Full Duplex and Flow Control extensions to 802.3 that are being drafted by the 802.3z Task Force.

The physical signaling protocol for Gigabit Ethernet will be derived from the ANSI/ASC X3 Fibre Channel FC-1 and FC-0 specifications. The 802.3 working group has set an objective that the data rate of this new standard should be 1000 Mb/s, as measured at the interface between the Data Link layer and the Physical layer. This will require some deviation from the parameters of the FC-0 specification, since FC-0 defines a data rate of 850 Mb/s measured at the equivalent interface.

More information about this project, check the IEEE Standards Web Site at ftp://stdsbbs.ieee.org/pub/802_main/802.3/gigabit. ◆

Howard Frazier chaired the 802.3 Higher Speed Study Group, which initiated the Gigabit Ethernet project. He is the former chair of the 100BASE-T Task Force.

IEEE 802.12

by William G. Lane

A high-speed supplement currently under development, IEEE Std 802.12-1995, will provide gigabit transfer rates for demand-priority shared-media local area networks while maintaining the 100 Mb/s campus topology limits (8 km maximum network diameter with up to five levels of cascaded repeaters). The new gigabit networks will utilize the current demand-priority MAC protocol, with timing parameters scaled to the new operating rates. New physical layers will be based on the Fibrechannel 8B10B link protocol. Link media will be ISO/IEC 11801: 1995 compliant optical fibre, either single mode or multimode, depending on link length requirements. Half-duplex burst-mode transmission will be provided on shared media. Full-duplex transmission (currently in development under a separate PAR) will be available for dedicated links.

Two transfer rates are under consideration for the fibre optic physical layers: 1.063 Gb/s and 1.25 Gb/s. The final decision will consider customer link-length requirements, the bandwidth/distance limitations of the optical fibre (the higher transfer rate could reduce the maximum link length approximately 18%), and whether or not 1.25 Gb/s Fibrechannel chips can be reasonably produced.

A half-gigabit transfer rate is also under consideration for four-pair Category 5 (or better) copper media. The proposed Physical layer is based on a multilevel transmission coding and control signaling scheme, where simultaneous control and data transfer is accomplished through use of a 3+1 (3 data plus 1 control) link configuration. Half-gigabit optical fibre transceivers will also be defined.

A web site on the supplement is being developed. Contact Chair Pat Thaler (pat@hprnd.rose.hp.com) for more information. ◆

Bill Lane is the technical editor for the IEEE P802.12 standards projects.

21st Century

(continued from cover page)

the Standards Board's concern that this group reflect both the technical and regional standards interests of IEEE.

In addition to the revision of IEEE Bylaw 309, the Standards Board Advisory Committee developed the first draft of the Standards Association Bylaws for submittal by the next deadline (1 May). These bylaws essentially address the addition of the Board of Governors; no major changes are contemplated for the Standards Board and its methods of operation. Both the revised 309 proposal and the newly drafted Standards Association Bylaws will be discussed at the Standards Board meeting in June. ◆

Donald C. Fleckenstein is a member of the IEEE Standards Board and the Publisher of the IEEE Standards Bearer.

IEEE Standards Association—An Organization for the Future

On 20 June, the IEEE Standards Board officially endorsed the formation of a Standards Association. The proposed reorganization of the IEEE Standards Activity aims to respond to worldwide standards issues; the technical, market, and competitive strategies of our industrial sectors; and to do all of this in the context of IEEE member-driven goals. It is also designed to maximize responsiveness to IEEE's goals and objectives while confirming the significance of IEEE's standards efforts to the broader marketplace for electrotechnical standards.

The creation of a Standards Association Board of Governors decouples matters of policy, financial oversight, globalization, and customer relations from the highly disciplined, rigorously monitored activity of managing and approving the standards development initiatives within the IEEE. Hence, the Standards Board can improve the effectiveness of its oversight while the governing board can provide the positioning necessary to advance the overall activity over time.

As the proposals are debated and processed through IEEE's Board of Directors (and its designated committees), more detailed descriptions will be made available, both in this newsletter and through other sources.

The Metrication of the National Electrical Safety Code®

by Chuck Amrhyn

The 1997 Edition of the National Electrical Safety Code (NESC), which will be published 1 August, is the first issue in which SI values (metric) will appear in the preferred (first place) position. As IEEE standards writers are aware, this change in sequence is an IEEE Standards Board requirement for all new and revised standards that will be published after 1 January 1998. Whereas the NESC is not covered by all IEEE procedures such as the IEEE Metric Policy, NESC members approved the "metric preferred position" in the Code. The following explains why this is so.

First, the NESC sets many of the safety standards for power and communications companies throughout the U.S., and in turn, numerous IEEE standards directly or indirectly impact the Code. Accordingly, NESC members feel that metric awareness on the part of Code users should be increased as it would help them when working with related IEEE standards and other standards developing organizations.

Second, experience in U.S. industries that have already metricated indicates that after workers have become familiar with SI, they prefer it to working with the inch-pound system. This is no surprise, since SI is a decimal system that eliminates the manipulation of fractions, always a potential source of error. In modern parlance, SI is user friendly.

And there are still other benefits. Perhaps the most useful for engineers is that SI is a coherent system. Coherence in a measurement system is the direct relationship, without intervening constants, that exists between the fundamental and derived units. Based upon only seven fundamental units (meter, kilogram, second, ampere, kelvin, mole, candela), SI completely satisfies the needs of the world's industrialized nations.

Just how much does coherence improve a measurement system? As only one example, the single SI derived unit of measurement for heat and energy, the joule, replaces 55 units in the inch-pound system! What could have greater appeal to efficiency-seeking engineers? ◆

Chuck Amrhyn is Chair of the NESC and is a member of SCC14 Quantities, Units, & Letter Symbols, which oversees metrication of standards.

IEEE STANDARDS BOARD

ACTIONS

20 June, 1996 **Montreal, Canada**

APPROVED PARs FOR NEW STANDARDS

P802.3z (C/LM) Supplement to Information Technology—Local and Metropolitan Area Networks—Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications—Media Access Control Parameters, Physical Layers, Repeater and Management Parameters for 1000 Mb/s Operation

P1003.24 (C/PA) Standard for Information Technology—Portable Operating System Interface (POSIX®) Ada-Binding to X Window System—Modular Toolkit Environment

P1278.1a (C/DIS) Standard for Distributed Interactive Simulation—Application Protocols

P1278.5 (C/DIS) Standard for Distributed Interactive Simulation—Fidelity Description Requirements

P1390.3 (SCC31) Standard for Automatic Meter Reading via Telephone—Network to Utility Controller

P1394.1 (C/MM) Standard for High Performance Serial Bus Bridges

P1394.2 (C/MM) Standard for Serial Express: A Scalable Gigabit Extension to the IEEE Standard Serial Bus

P1448a (C/SE) Standard for Information Technology—Software Life Cycle Processes—Process Extensions, Life Cycle Data Definition, and Usage Guidelines

P1450 (C/TT) Standard Test Interface Language (STIL) for the Transfer of Digital Test Vector Data

P1459 (PE/PSIM) Standard Definitions for the Measurement of Electric Power Quantities Under Sinusoidal, Non-Sinusoidal, Balanced, or Unbalanced Conditions

P1466 (SCC28) Recommended Practice for the Safe Use of Electromagnetic Energy Sources, Equipment, and Systems Operating Between 3 kHz and 300 GHz

P1467 (R) Guide for Reliability Growth Management and Assessment of Systems with Nonhomogeneous Poisson Failure and Failure-Mode Processes

P1468 (R) Standard for Customer-Specified Performance-Based Reliability Test Requirements (Statistical Test Design Not Specified)

P1469 (R) Guide for Producers to Develop Statistical Test Designs for Customer—Specified Reliability Test Requirements

P1470 (R) Guide for Customer Evaluation of Producer-Developed Statistical Reliability Test Designs

P1471 (C/SE) Recommended Practice for Information Technology—System Design—Architectural Description

P1596.9 (C/MM) Standard for the Physical Layer Application Programming Interface for the Scalable Coherent Interface (SCI PHY-API)

PC57.135 (PE/TR) Guide for the Application, Specification, and Testing of Phase Shifting Transformers

REVISED PARs

P620 (PE/EM) Guide for the Presentation of Thermal Limit Curves for Squirrel Cage Induction Machines

P848 (PE/IC) Standard Procedure for the Determination of the Ampacity Derating of Fire Protected Cables

P1003.1a (C/PA) Standard for Information Technology—Portable Operating System Interface (POSIX®)—Part 1: System Application Program Interface (API) [C Language] Amendment

P1003.5b (C/PA) Standard for Information Technology—POSIX® Ada Language Interfaces—Part 1: Binding for System Application Program Interface (API)—Amendment 1: Realtime Extensions

P1015 (IA/PSP) Recommended Practice for an Application Guide for Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems

P1144 (SCC21) Recommended Practice for Sizing Nickel/Cadmium Batteries for Photovoltaic (PV) Systems

P1284.2 (C/MM) Standard for Test, Measurement, and Conformance to IEEE Std 1284

P1286 (PE/SWG) Standard for 4.76–38 kV Rated Grounding and Testing Devices Used in Enclosures

P1305 (C/SAB) Recommended Practice for the Definition of Terms for Artificial Neural Networks

P1306 (C/SAB) Guide for the Evaluation of the Speed and Accuracy of Implementations of Feed-Forward Artificial Neural Networks

P1390.1 (SCC31) Standard for Utility Telemetry Service Transport Profile Protocols for Switched Telephone Network

P1392 (C/SAB) Recommended Practice for Terminology—Definition of Terms for Virtual Reality

P1421 (C/SAB) Recommended Practice for the Evaluation of the Performance of Implementations of Training-Related Algorithms for Multilayer Perceptron Artificial Neural Networks

P1422 (C/SAB) Recommended Practice for Terminology—Definition of Terms for Evolutionary Computation Systems

P1423 (C/SAB) Recommended Practice for Terminology—Definition of Terms for Fuzzy Systems

P1424 (C/SAB) Recommended Practice for the Definition, Specification and Analysis of Systems using Artificial Neural Networks, Fuzzy Systems, Evolutionary Systems and/or Virtual Reality

P1432 (C/SAB) Recommended Practice for the Specification of Motion Tracking Systems Used in Virtual Reality Systems

P1439 (C/SAB) Guide for the Specification of Software Interfaces for Artificial Neural Networks (ANN) Systems

P1440 (C/SAB) Guide for the Definition and Specification of Fuzzy Systems (FZ) in Applications and Their Interfaces with Other Elements of Computational Intelligence (CI) of the System

PC37.73 (PE/SWG) Standard Requirements for Padmounted Fused Switchgear

PC57.19.03 (PE/TR) Standard Requirements, Terminology and Test Code for Bushings for DC Applications

PC62.62 (PE/SPD) Standard Test Specifications for Surge Protective Devices for Low-Voltage AC Power Circuits

PARs FOR STANDARDS REVISIONS

P145 (AP/A) Standard Definitions of Terms for Antennas

P205 (BT/AV Tech) Standard for Television: Measurement of Luminance Signal Levels

P421.2 (PE/ED&PG) Guide for Identification, Testing, and Evaluation of the Dynamic Performance of Excitation Control Systems

P421.4 (PE/ED&PG) Guide for the Preparation of Excitation System Specifications

P1101.1 (C/BA) Standard for Mechanical Core Specifications for Microcomputers Using IEC 603-2 Connectors

P1110 (PE/EM) Guide for Synchronous Generator Modeling Practices in Stability Analyses

PC57.12.24 (PE/TR) Standard Requirements for Underground-Type Three-Phase Distribution Transformers 2500 kVA and Smaller; High Voltage: 34 500 GrdY/19 920 V and Below; Low Voltage: 480 V and Below

ABBREVIATIONS

AP/A	Antennas & Propagation/Antennas
BT/AV Tech	Broadcast Technology/Audio & Visual Techniques
C/BA	Computer/Bus Architecture
C/DIS	Computer/Distributed Interactive Simulation
C/LM	Computer/LAN MAN
C/PA	Computer/Portable Applications
C/MM	Computer/Microprocessors & Microcomputers
C/SAB	Computer/Standards Activities Board
C/SE	Computer/Software Engineering
C/TT	Computer/Test Technology
ED	Electron Devices
EMC/SC	Electromagnetic Compatibility/Standards Committee
IA/ID	Industry Applications/Industrial Drives
IA/PSP	Industry Applications/Power Systems Protection
NPS/NI&D	Nuclear & Plasma Sciences/Nuclear Instruments & Detectors
PE	Power Engineering
PE/ED&PG	PE/Energy Development & Power Generation
PE/EM	PE/Electric Machinery
PE/IC	PE/Insulated Conductors
PE/NPE	PE/Nuclear Power Engineering
PE/PSIM	PE/Power System Instrumentation & Measurement
PE/SPD	PE/Surge-Protective Devices
PE/SUB	PE/Substations
PE/SWG	PE/Switchgear
PE/T&D	PE/Transmission & Distribution
PE/TC	PE/Technical Council
PE/TR	PE/Transformers
PEL/ET	Power Electronics/Electronics Transformers
R	Reliability
SCC	Standards Coordinating Committee
SCC14/ ASTM	SCC14 (Quantities, Units & Letter Symbols) and the American Society for Testing & Materials
SCC21	SCC 21 (Photovoltaics)
SCC28	SCC 28 (Non-ionizing Radiation)
SCC29	SCC 29 (Stationary Batteries)
SCC31	SCC31 (Automatic Meter Reading & Energy Mgmt.)

PC57.19.00 (PE/TR) Standard General Requirements and Test Procedure for Power Apparatus Bushings

PC57.19.01 (PE/TR) Standard Performance Characteristics and Dimensions for Outdoor Apparatus Bushings

PC57.113 (PE/TR) Recommended Practice for Partial Discharge Measurement in Liquid-Filled Power Transformers and Shunt Reactors

PC62.41 (PE/SPD) Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits

PC95.2 (SCC28) Standard for Radio Frequency Radiation Hazard Warning and Radio Frequency Current Flow Icons

WITHDRAWN PARs

P597 (IA/ID) Standard Practices and Requirements for General Purpose Thyristor DC Drives

P1003.5a (C/PA) Standard for Information Technology—POSIX® Ada Language Interfaces—Part 1: Binding for System Application Program Interface (API)

P1003.5d (C/PA) Standard for Information Technology—POSIX® Ada Language Interfaces—Binding for Protocol Independent Interfaces—Sockets

P2003.5 (C/PA) Standard for Information Technology—Test Methods for Measuring Conformance to IEEE Std 1003.5-1992 (Ada)

NEW STANDARDS

We are pleased to announce that we will now be including ordering information for IEEE *approved draft standards. The standards* highlighted below are available for sale while in production. You may order them through IEEE Customer Service at (800) 678-IEEE (in the US and Canada) or (908) 981-0060.

Computer Science

802.3r-1996 (C/LM) Supplement to IEEE Std 8802-3: Type 10BASE5 Medium Attachment Unit (MAU) Protocol Implementation Conformance Statement (PICS) Proforma (Section 8.8)
[AD104] • Price: $42.00 • IEEE Mbr: $34.00

1003.5b-1996 (C/PA) Standard for Information Technology—POSIX® Ada Language Interfaces—Part 1: Binding for System Applications Program Interface (API)—Amendment 1: Realtime Extensions
[AD107] • Price: $86.00 • IEEE Mbr: $69.00

1156.2-1996 (C/MM) Standard for Environmental Specification for Computer Systems
[AD111] • Price: $42.00 • IEEE Mbr: $34.00

2003.2-1996 (C/PA) Standard for Information Technology—Test Methods for Measuring Conformance to POSIX®—Part 2: Shell and Utilities
[AD101] • Price: $162.00 • IEEE Mbr: $130.00

Electromagnetics

1309-1996 (EMC/SC) Standard for Calibration of Electromagnetic Field Sensors and Probes Excluding Antennas from 9 kHz to 40 GHz
[AD109] • Price: $45.00 • IEEE Mbr: $36.00

Power & Energy

* **848** (PE/IC) Standard Procedure for the Determination of the Ampacity Derating of Fire Protected Cables

1107-1996 (PE/EM) Recommended Practice for Thermal Evaluation of Sealed Insulation Systems for AC Electric Machinery Employing Random Wound Stator Coils
[AD110] • Price: $42.00 • IEEE Mbr: $34.00

1144-1996 (SCC21) Recommended Practice for Sizing Nickel/Cadmium Batteries for Photovoltaic

** Final approval subject to Standards Board conditions being met.*

(PV) Systems
[AD112] • Price: $45.00 • IEEE Mbr: $36.00

1188-1996 (SCC29) Recommended Practice for Maintenance, Testing, and Replacement of Valve Regulated Lead-Acid Batteries for Stationary Applications
[AD118] • Price: $42.00 • IEEE Mbr: $34.00

***1189** (SCC29) Guide for Selection of Valve-Regulated Lead-Acid (VRLA) Batteries for Stationary Applications

***1300** (PE/IC) Guide for Cable Connections for Gas Insulated Substations

1307-1996 (PE/T&D) Trial-Use Guide for Fall Protection for the Utility Industry
[AD113] • Price: $43.00 • IEEE Mbr: $35.00

1310-1996 (PE/EM) Trial Use Recommended Practice for Thermal Cycle Testing of Form Wound Stator Bars and Coils for Large Generators
[AD108] • Price: $44.00 • IEEE Mbr: $35.00

1325-1996 (PE/SWG) Recommended Practice for Reporting Field Failure Data for Power Circuit Breakers
[AD106] • Price: $41.00 • IEEE Mbr: $33.00

***C37.40b** (PE/SWG) Standard Service Conditions and Definitions for External Fuses for Shunt Capacitors

* **C37.41e** (PE/SWG) Standard Design Tests for External Fuses Shunt Capacitors

C57.12.35-1996 (PE/TR) Standard for Bar Coding for Distribution Transformers
[AD115] • Price: $42.00 • IEEE Mbr: $33.00

C57.19.03-1996 (PE/TR) Standard Requirements, Terminology, and Test Code for Busings for DC Applications
[AD100] • Price: $43.00 • IEEE Mbr: $34.00

REVISED STANDARDS

Graphic Symbols & Designations

* **268** (SCC14 & ASTM) Standard for Use of the International System of Units (SI): The Modern Metric System

Nuclear Engineering

325-1996 (NPS/NI&D) Standard Test Procedures for Germanium Gamma-Ray Detectors
[AD103] • Price: $46.00 • IEEE Mbr: $37.00

Power & Energy

* **367** (PE/PSC) Recommended Practice for Determining the Electric Power Station Ground Potential Rise and Induced Voltage from a Power Fault

389-1996 (PEL/ET) Recommended Practice for Testing Electronics Transformers and Inductors
[AD116] • Price: $45.00 • IEEE Mbr: $36.00

620-1996 (PE/EM) Guide for the Presentation of Thermal Limit Curves for Squirrel Cage Induction Machines
[AD117] • Price: $41.00 • IEEE Mbr: $33.00

* **1313.1** (PE/TC) Standard for Insulation Coordination—Definitions, Principles and Rules

C37.37-1996 (PE/SWG) Standard for Loading Guide for AC High-Voltage Air Switches (in Excess of 1000 V)
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C57.12.20-1996 (PE/TR) Standard for Overhead Distribution Transformers, 500 kVA and Smaller: High Voltage, 34 500 V and below: Low Voltage 7970/13 800 Y V and below
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REAFFIRMATION

125 (PE/ED&PG) Recommended Practice for Preparation of Equipment Specifications for Speed-Governing of Hydraulic Turbines Intended to Drive Electric Generators

317 (PE/NPE) Standard for Electric Penetration Assemblies in Containment Structures for Nuclear Power Generating Stations

1158 (PE/SUB) Recommended Practice for Determination of Power Losses in High-Voltage Direct-Curent (HVDC) Converter Stations

C37.36b (PE/SWG) Guide to Current Interruption with Horn-Gap Air Switches

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Computer Science

8802-3: 1996 (ISO/IEC) (ANSI/IEEE Std 802.3, 1996 Edition) Information technology—Telecommunications and information exchange between systems—Local and metropolitan area networks—LAN/MAN-Type Specific Requirements, Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications *(incorporates 802.3j-1993, 802.3k-1992, 802.3l-1992, 802.3m, 802.3n, 802.3p&q-1993, 802.3s, 802.3t, 802.3v)*
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1233-1996 IEEE Guide to Developing System RequirementsSpecifications
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1275.4-1995 IEEE Standard for Boot (Initialization Configuration) Firmware: Bus *Supplement for IEEE 896 (Futurebus+®)*
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A single worldwide standard for the Electric Power Industry:

WHY DEVELOP STANDARDS IN IEEE IF THE GOAL IS TO HARMONIZE STANDARDS WITH IEC?

by Anne O'Neill

With Gatt endorsing the nation-based standards of the organizations IEC (the International Electrotechnical Commission) and ISO (the International Organization for Standardization), is the significance of IEEE as a standards organization diminished? Some of my conversations with Power Engineering Society members who actively develop standards in both IEEE and IEC have revealed a broad range of roles for each organization that are often complementary. Let's look at some of the differences between the two organizations to show why this is so.

1. IEEE and IEC goals often differ.

IEEE is a technical, professional association. The goals practiced by our standards developing working groups are often motivated by the desire for the best technical solution, optimized for quality performance, ease of maintenance, and long-term reliability. IEEE standards often include basic tutorial information to enable intelligent implementation of the standard.

IEC standards-developing working groups are often motivated by the desire for standards that enable international trade; thus, their standards set basic minimum requirements so that countries can safely allow product imports.

2. IEC might not have a committee with the appropriate scope.

Since IEC technical committees do not have a one-to-one correspondence with IEEE technical committees, standards developers creating work in an IEEE technical area may have a great deal of difficulty finding or creating a technical committee in IEC to contemplate the work.

3. IEEE offers application guides and recommended practices, while IEC prefers to do standards only.

IEC documents that are similar to IEEE's application guides and recommended practices are called Technical Reports. But the IEC Central Office often advises its Technical Committees and working groups that standards, not application guides, are the reason they are in business. IEEE has a reputation for developing standards with succinct sets of numerical specifications as well as technically informative application guides and recommended practices.

4. Different operating practices and market preferences demand different standards.

IEEE and IEC have historically written their standards for differing electrical infrastructures. In many instances, the market still demands that this practice continue. Corporate policies as expressed through the business strategies of companies are often represented by technical experts in IEEE working groups.

5. IEEE's procedures speed up the balloting cycle.

IEC procedures require a full six months between each of their voting stages for the results to be distributed, reviewed, and commented on prior to meetings. IEEE procedures allow ballot resolution to occur with quicker turnaround times.

6. IEEE facilitates the gathering of experts.

The topic of a new IEEE standard often grows naturally out of the problem-solving camaraderie at IEEE technical meetings. This encourages experts to attend future meetings to document their consensual ideas.

7. IEC working groups cannot accommodate every participant.

Members of IEC working groups must be appointed by a national member body of IEC. Because no single nation should dominate working group membership or participation, expertise that happens to be concentrated in a particular geographical area cannot be adequately represented.

The IEEE standards development work allows a wider base of technical input. PES technical meetings already have a large pool of technical experts in regular attendance who can contribute. To be a player in the standards world, you have to participate early in the development stage. IEEE gives many experts the opportunity to do that.

8. Cooperative efforts allow for thoughtful timing.

Both IEC and IEEE count on a four to five year revision cycle for a standard. Revisions are also expected to be completed in a timely fashion even though technological advances do not always accommodate the scheduled plans of the standards developers.

Last minute discoveries of poorly defined passages, or sections not enabling to new technologies, can be exasperating to developers who feel they've finished a quite useable document. IEEE and IEC sometimes work cooperatively when rapidly evolving technology demands tight revision cycles that tax resources of a single organization. That way each group can approve and publish a standard as a snap shot in time, while the other can still be finely crafting the consensus of new issues for the same industry segment. Although the amendment process can serve the same purpose, sometimes handing the problem off to another group can break road blocks that have stood in the way of the last group.

9. Citation of referenced standards must be compatible.

Many standards are based on other standards for environmental classification, measurement and calibration techniques, and testing methods. IEC and IEEE reference their own standards within a given standards document. Compatibility has not yet been explored adequately to harmonize the complete family of standards work between these two organizations.

In our next issue, look for more information on adopting IEC standards through an IEEE working group and the IEEE Standards Board. ◆

Anne O'Neill is the International Program Engineer for PES.

Region 9

(continued from front cover)

Lecturer's Program is available by sending e-mail to info.distlec@ieee.org.

Providing Spanish language translations of IEEE published materials is another item of interest for Region 9. IEEE Standards, Education, and Publications Boards are developing policies on this issue. Each regional, section, or chapter organization should establish their needs for language translation and then plan, fund, and implement needs. IEEE organizational units as well as engineering instructors considering translating IEEE material for public use, must contact the intellectual property administrators at the IEEE to arrange a copyright permission agreement.

Region 9 leaders find electronic communication a tremendous help for their organization, and 80% of their leadership has e-mail. Their Spanish language home page, http://wwwr9.upr.clu.edu., has a table of all the regional countries and hot links to terminology and latest advances. ◆

Guide on International Standards Development — How to Work With the IEC

Interested in learning about and working with the IEC on standards projects? If so, a recent IEEE Standards Board publication will provide background material and suggested procedures for coordinating standards development projects with the IEC.

One of the long-range goals of the IEEE is to globalize its programs by broadening the services to all IEEE members in the world. A strategy supporting this objective is the development of internationally acceptable standards through cooperation with the IEC. The document entitled *IEEE Standards Board International Committee (IntCom) Guides to Developing Standards in Parallel with Other Standards-Developing Organizations—Guide #2: IEC* provides a mechanism for implementing this strategy.

This publication outlines how IEEE members can learn about the IEC organization and its procedures, and resources provided by the IEEE, the U.S. National Committee of IEC, and the IEC. A basic primer comparing IEEE and IEC standards developing processes is included. Techniques that can be used to coordinate a variety of standards projects with the IEC are given. Examples include the adoption of an existing IEEE standard by IEC; the adoption of an existing IEC standard by IEEE; the harmonization of existing IEEE and IEC standards on the same class of product; and the development of a new standard not currently covered by existing IEEE and IEC standards.

For reference, a list of worldwide IEC National Committees is given, as well as a complete list of all IEC Technical Committees and Subcommittees.

The source for this publication is the IEEE Standards Web site at http://stdsbbs.ieee.org/development/intcom/IECguide.html.

Copies of this publication may obtained from the IEEE Standards by contacting Rona Kershner at (908) 562-3808; fax: (908) 562-1571 or e-mail: r.kershner@ieee.org. ◆

CONGRATULATIONS

AWARDS SPOTLIGHT

Standards Medallion

The following are recepients of the IEEE Standards Medallion for their outstanding contributions to the development of IEEE standards.

Henry Foelker **Joe Koepfinger**
Andrew Hileman **Don Worden**

The IEEE Standards Board formally congratulates the officers, as well as their working groups, on the publication of their standard.

Harold C. Hervig, Chair; **Glenn L. Luzzi;** Vice Chair: *48-1996* IEEE Standard Test Procedures and Requirements for Alternating-Current Cable Terminations 2.5 kV Through 765 kV

Neil Nichols, Chair: *446-1995* IEEE Recommended Practice for Emergency and Standby Power Systems for Industrial and Commercial Applications (IEEE Orange Book)

Robert R. Beavers, Chair; **Edward C. Stallings,** Task Force Leader: *484-1996* IEEE Recommended Practice for Installation Design and Installation of Vented Lead-Acid Batteries for Stationary Applications

Cleon Barker, Chair: *647-1995* IEEE Standard Specification Format Guide and Test Procedure for Single-Axis Laser Gyros

James Turner, Vice Chair; **James Ingle**, Secretary and Technical Editor: *743-1995* IEEE Standard Equipment Requirements and Measurement Techniques for Analog Transmission Parameters for Telecommunications

William M. Corwin, Chair: *1003.1c-1995* IEEE Standard for Information Technology—Portable Operating System Interface (POSIX)®—Part 1: System Application Program Interface (API)—Amendment 2: Threads Extension [C Language]

John Zolnowsky, Technical Editor: **1003.1i-1995** IEEE Standard for Information Technology—Portable Operating System Interface (POSIX®)—Part 1: System Application Porgram Interface (API)—Amendment 3: Technical Corrigenda to Realtime Extension [C Language]

Cynthia Brehmer, Chair, **Jaya R. Carl,** Co-Chair: *1044.1-1995* Guide to IEEE Standard for Classification of Software Anomalies

H. J. Kientz, Task Force Leader: *1067-1996* IEEE Guide for In-Service Use, Care, Maintenance, and Testing of Conductive Clothing for Use on Voltages up to 765 kV ac and ±750 kV dc

William Croker, Chair: *1070-1995* IEEE Guide for the Design and Testing of Transmission Modular Restoration Structure Components

Victor Berman, Chair: *1076.4-1995* IEEE Standard VITAL Application-Specific Integrated Circuit (ASIC) Modeling Specification

Joseph S. Dudor, SCC29 Chair; **Joseph A. Cristino,** Chair: *1187-1996* IEEE Recommended Practice for Installation Design and Installation of Valve-Regulated Lead-Acid Storage Batteries for Stationary Applications

Arnold M. Greenspan, Chair; **J. Jeffrey Dean**, Co-Chair: *1226.6-1996* IEEE Guide for the Understanding of the "A Broad Based Environment for Test (ABBET)™" Standard

Louis E. Miller, Chair: *1233-1996* IEEE Guide to Developing System Requirements Specifications

William M. Bradley, Chair: *1275.4-1995* IEEE Standard for Boot (Initialization Configuration) Firmware: Bus Supplement for IEEE 896 (Futurebus+)®

Ken Martin, Chair; **Gabriel Benmouyal,** Co-Chair; **Arun Phadke,** Convener: *1344-1995* IEEE Standard for Synchrophasors for Power Systems

Colin Whitby-Strevens, Chair; **Roland Marbot,** Co-Chair; **Andrew Cofler,** Editor: *1355-1995* IEEE Standard for Heterogeneous InterConnect (HIC) (Low-Cost, Low-Latency Scalable Serial Interconnect for Parallel System Construction)

Maqsoodul Mannan, Chair: *1364-1995* IEEE Standard Hardware Description Language Based on the Verilog® Hardware Description Language

Gerald Marazas, Chair: *1394-1995* IEEE Standard for a High Performance Serial Bus

William P. Wadby, Chair; **Hardy J. King,** Vice Chair: *C37.102-1995* IEEE Guide for AC Generator Protection

George Duve, Chair: *C136.10-1996* American National Standard for Roadway Lighting Equipment—Locking-Type Photocontrol Devices and Mating Receptacle Physical and Electrical Interchangeability and Testing

George Duve, Chair: *C136.27-1996* American National Standard for Roadway Lighting Equipment—Tunnel Lighting Luminaires

CALENDAR

OF EVENTS

AUGUST

9 *Deadline for draft and PAR submission for September Standards Board meeting*

16–17 **Measurement of Radio-Noise Emissions (C63.4)**
Santa Clara, CA
contact—Tina Alston
(908) 562-3816; fax: (908) 562-1571

19–23 **IEEE 1996 International Symposium on Electromagnetic Compatibility**
Santa Clara, CA
contact—David Hanttula
(415) 933-1071; e-mail: mailto: hanttula@engr.sgi.com

23–24 **ASC C63 Electromagentic Compatibility Meeting**
Santa Clara, CA
contact—Rosemary Tennis (908) 562-3811; fax: (908) 562-1571; e-mail: r.tennis@ieee.org

SEPTEMBER

9 **US TAG for ISO/IEC JTC1/SC26**
(Computer Society)
Nashua, NH
contact—Clyde Camp, Chair US TAG for JTCI/1SC26, Texas Instruments, Inc., 2313 Merimac Drive, Plano, TX 75075
(214) 995-0407

9–11 **US TAG for ISO/IEC JTC1/SC7**
(Computer Society), Newport, RI
contact—Leonard Tripp, Chair, US TAG for SC7, Boeing Commmercial Airplane, MS 6H-TW, PO Box 3707, Seattle WA 98124
(206) 662-4437

11–13 **Automatic Meter Reading & Energy Management Meeting (SCC31)**
New Orleans, LA
contact—AMRA Headquarters
(708) 480-9628; fax: (708) 480-9282; e-mail: amrahq@aol.com

15–21 **Power System Communications (Power System Communications)**
Los Angeles, CA
contact—S. S. Dev Walia
(908) 422-2104

16 **Computer Society Standards Activities Board Meeting**
(Computer Society)
Piscataway, NJ
contact—Deirdre Bagley, (202) 371-1013; fax: (202) 728-0884; e-mail: d.bagley@computer.org

16–20 **Distributed Interactive Simulation Committee meeting**
(Computer Society)
Orlando, FL
contact—Rhonda Freeman
(407) 658-5033; fax: (407) 658-5059; e-mail: rfreeman@ist.ucf.edu

17–19 **IEEE Standards Board Committee Meetings**
New Brunswick, NJ
contact—Terry DeCourcelle
(908) 562-3807; fax: (908) 562-1571; e-mail: t.decourcelle@ieee.org

19–21 **IEEE Industrial and Commercial Power System—The Color Books Seminar**
Philadelphia, PA
contact—Tina Alston
(908) 562-3816; fax: (908) 562-1571

22–25 **Power System Relaying Committee meeting**
(Power Engineering Society)
Los Angeles, CA
contact—J. C. Appleyard
(608) 643-3462; fax: (608) 643-3879

23–25 **IEEE 1996 Petroleum and Chemical Conference**
Philadelphia, PA
contact—William Casper
Fax: (610) 687-3511

29–Oct. 3 **Switchgear Committee meeting**
(Power Engineering Society)
San Antonio, TX
contact—K. I. Gray
(708) 597-8190; fax: (708) 597-3028

OCTOBER

7–11 **Surge Protective Devices Committee meeting**
(Power Engineering Society)
Salt Lake City, Utah
contact—R. Dick Odenberg
(208) 772-9016; fax: (208) 772-9016

14 **Microprocessor Standards Committee meeting**
(Computer Society)
Santa Clara, CA
contact—David B. Gustavson
(415) 961-0305; fax: 415-961-3530; e-mail: dbg@sunrise.scu.edu

20 **Software Engineering Standards Committee meeting**
(Computer Society)
Montreal, Canada
contact—IEEE Computer Society
(202) 371-1013; fax: (202) 728-0884

20–25 **Portable Applications Standards Commitee (PASC) meeting**
(Computer Society)
Munich, Germany
contact—IEEE Computer Society
(202) 371-1013; fax: (202) 728-0884

22 **Short Course on IEEE Std C95.1**
(IEEE SCC28); Wilmington, DE
contact—Zipse Electrical Engineering
(610) 358-1462

26–30 **Transformers Committee meeting**
(Power Engineering Society)
Burlington, Vermont
contact—J. H. Harlow
(813) 544-2326; fax: (813) 546-0121

28–30 **ASC C136 Roadway Lighting Committee Meeting**
St. Pete, FL
contact—Rosemary Tennis
(908) 562-3811; fax: (908) 562-1571; e-mail: r.tennis@ieee.org

NOVEMBER

1 *Deadline for draft and PAR submission for December Standards Board meeting*

3–6 **Insulated Conductors Committee meeting**
(Power Engineering Society)
St. Petersburg, FL
contact—M. S. Mashikian
(203) 486-5298; fax: (203) 486-5916

11–15 **LAN MAN Standards Committee meeting**
(Computer Society)
Vancouver, Canada
contact—Classic Consulting
(604) 527-1045; fax: 604-527-1046; e-mail: 72630.107@compuserve.com

Public vs. Private Information

Volunteers and staff receive requests from a wide range of people for lists of IEEE Standards Working Group members.

IEEE Policy and Procedures Manual, Section 14, states that committee rosters *(a list of people including names, addresses, telephone numbers, fax numbers, and e-mail addresses)* be provided on request for the purpose of committee work. Committee work includes activities sponsored by IEEE committees, such as preparation of technical documents and standards, as well as agendas, minutes, action items, and other committee correspondence.

Such information should not be provided for non-IEEE purposes such as initiating commercial contacts, marketing products, or lobbying.

Requests for rosters of committee members should be referred to the appropriate Working Group Chair. It is the Chair's responsibility to follow his or her society's or committee's procedures in developing a response for requests for membership lists. If the sponsor does not provide a procedure, Working Group Chairs should refer to IEEE Policy and Procedures Manual Section 14, or contact their staff liaison for further advice.

The table below provides guidance in responding to requests for this information.

PUBLIC	PRIVATE
Open Files: IEEE Standards Board records are available upon request. These records include Project Authorization Requests (PARs) and submittals to RevCom, including balloting summaries. Balloters' addresses are not released unless cleared through the Sponsor.	*Data Ownership:* Rosters of committee membership are considered to be information that is owned by the various societies, technical committees, and standards committees that sponsor our standards projects. They are used only for purposes of committee work.

XX Correction Sheets *XX*

The following correction sheets are available from the IEEE Standards Department. Write to IEEE Standards, ATT: Correction Sheets, for a free copy.

- IEEE Std 802.1H-1995, IEEE Standard for Local and Metropolitan Area Networks: Recommended Practice for Media Access Control (MAC) Bridging of Ethernet Version 2.0 in 802 Local Area Networks.
- IEEE Std 802.3u-1995, Suplement to ISO/IEC 8802-3: Media Access Control (MAC) Parameters, Physical Layer, Medium Attachment Units, and Repeater for 100 Mb/s Operation, Type 100BASE-T (Clauses 21–30).
- IEEE Std 837-1989, IEEE Standard for Qualifying Permanent Connections Used in Substation Grounding.

IEEE SCC28 TO PRESENT SHORT COURSE ON IEEE Std C95.1

IEEE Standards Coordinating Committee 28 on Non-Ionizing Radiation is presenting a short course called "Understanding and Applying Human Exposure Safety Levels in Radio Frequency Electromagnetic Fields 3 kHz to 300 GHz," based on *IEEE Std C95.1, IEEE Standard Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields 3 kHz to 300 GHz.*

The course will be taught by experts in the field: Eleanor R. Adair, Ronald Petersen, John M. Osepchuk, and Richard A. Tell.

Tuesday, October 22, 1996, 8 a.m. to 5 p.m.
Radisson Hotel, Wilmington, DE
Cost: $295.00

To register, contact Zipse Electrical Engineering, Inc. (610) 358-1462.

IEEE and EIA JOINT AGREEMENT FOR STANDARDS DEVELOPMENT

In late 1995, IEEE Standards entered into an agreement with the Electronics Industries Association (EIA) for joint development of a family of standards addressing software life cycles. This agreement is part of the continuing effort by IEEE Standards to strengthen its standards program and benefit standards users worldwide.

All standards produced under this agreement will carry a joint EIA and IEEE designation and will conform to ISO/IEC (International Organization for Standardization/International Electrotechnical Commission) directives—ensuring uniform style and fostering international acceptance.

We are pleased to announce that the first standard produced as a result of the agreement is now available, *EIA/IEEE J-Std-016-1995, EIA/IEEE Interim Standard for Information Technology—Software Life Cycle Processes—Software Development—Acquirer-Supplier Agreement* (Issued for Trial Use).

EIA/IEEE Std J-016-1995
232 pages • SH94377-NYU • Price: $156.00

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