IEEE-SA STANDARDS BEARER

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Standard for In-System Configuration of Programmable Devices Approved

On 21 September the IEEE-SA Standards Board unanimously approved a hardware specification that allows programmable integrated circuit manufacturers to design conformant devices.

IEEE Std 1532-2000, *IEEE Standard for In-System Configuration (ISC) of Programmable Devices,* describes a series of programming instructions and associated data registers that define a standard methodology for accessing and configuring programmable devices. It allows for the programming of one or more compliant devices concurrently, while mounted on a board or embedded in a system. The in-system feature addresses the need to configure or reconfigure, read-back, verify, or erase programmable devices after they have been installed by a manufacturing process. This eliminates handling damage and the need for manufacturing steps and inventory management related to pre-programmed devices.

The programming process defined in the standard is based upon the communication protocol described by IEEE Std 1149.1-1990, *IEEE Standard for Test Access Port and Boundary-Scan Architecture,* taking advantage of the support for the IEEE 1149.1 standard already in most integrated circuit devices for test purposes.

Devices that adhere to IEEE Std 1532-2000 will realize significant savings in software, product development, and manufacturing costs related to ISC, particularly when the devices belong to different device families or come from different vendors. In the past, one family of devices from a single vendor might have been incompatible with another family from that same vendor, with respect to the programming process.

The standardization of the device behavior before, during, and after programming is crucial for board and system designers who need to ensure the orderly and predictable operation of their products. The same tools used for system test facilitate optimized multi-vendor device programming by integrating ISC operations based on IEEE Std 1532-2000 with the IEEE Std 1149.1 test access port (TAP),

The In-System Configuration Working Group of the Test Technology Technical Council of the IEEE Computer Society consists of representatives from the following leading technology companies: Agilent Technologies, Altera, ASSET InterTech, Atmel, Cisco Systems, Corelis, Cypress, Data IO, GenRad, Intellitech, JTAG Technologies, Lattice Semiconductor, Lockheed Martin, Lucent Technologies, and Xilinx. This group represents the leading manufacturers of programmable integrated circuits, IEEE Std 1149.1-based test tools, in-circuit testers, programming tools, and end-users.

The working group continues to actively develop the software specification based on IEEE Std 1149.1's BSDL. More information about IEEE Std 1532-2000 can be found at **http://grouper.ieee.org/groups/1532/index.html** or contact Neil Jacobson, 1532 Working Group Chair; **neil.jacobson@xilinx.com**.

WHAT'S INSIDE...

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Development of the IEEE Standard for Distributed Power Resources and Electric Power Systems Interconnection

by Thomas Basso

Power engineering standards developers know that there are major obstacles to an orderly transition to the use and integration of distributed power resources in the electric power industry. The problem of a lack of national interconnection standards and tests for interconnection operation and certification, as well as the need for better national building, electrical, and safety code, is understood by all interested parties. The IEEE P1547 Interconnection Standard should prove to be a milestone for both the IEEE standards consensus process, and the development of further national standards dedicated to the success of the U.S.'s electric power system.

Currently, there is an IEEE working group preparing draft 6 of IEEE P1547, *IEEE Draft Standard for Distributed Resources Interconnected with Electric Power Systems.* P1547 was approved by the IEEE Standards Association (IEEE-SA) Standards Board in March 1999. This standard establishes criteria and requirements for the interconnection of distributed resources with electric power systems. It provides a uniform standard for this interconnection, as well as requirements relevant to the performance, operation, testing, safety considerations, and maintenance of the interconnection.

The sponsor of P1547 is IEEE Standards Coordinating Committee 21 (IEEE SCC21) on Fuel Cells, Photovoltaics, Dispersed Generation, and Energy Storage, which is chaired by Richard DeBlasio. IEEE SCC21 held a widely publicized meeting in December 1998 to establish member's professional technical commitment to and support for developing an IEEE interconnection standard document. The interest was overwhelming, and it was decided that the document should be an IEEE standard, as opposed to a guide or a recommended practice. Further, the P1547 founding participants agreed upon a fast-track development schedule of meeting every two months. The formal IEEE Project Authorization Request (PAR) title, scope, and purpose, as well as the P1547 officials, were agreed upon at the December 1998 IEEE SCC21 meeting. In January 1999, the PAR was submitted by Richard DeBlasio, who was named the P1547 Working Group Chair. The working group has targeted March 2001 for the final ballot of the P1547 document.

Summary

The government and the manufacturing and electric power industries have expressed substantial interest over the past five years in the use of distributed generation and storage. This interest is due, in part, to the potential for distributed resources to provide increased reliability and lower cost to the customer, particularly with customer-sited generation. The advent of competition in the electric power industry, and the desire for customer choice, also have provided a stimulus for this increased interest. Largely contributing to this trend has been the development of small, modular generation technologies, such as fuel cells, photovoltaics, and microturbines. The industry estimates that distributed resources will account for up to 30% of new generation by 2010. The environmental benefits of distributed power exploitation are substantial (e.g., renewable resources and combined heat and power generation).

Although the application of distributed generation and storage can bring many benefits, the technologies required to properly integrate them into the power system must be further developed to realize these benefits and to avoid negative impacts on system reliability and safety. The system integration issues related to distributed power cut across a number of industries. A federal and industry leadership role is required to bring together these various parties (e.g., hardware manufacturers, utilities, energy service companies, codes and standards organizations, state regulators and legislators, and others) to address the technical, institutional, and regulatory barriers to distributed power. In fact, these very groups have expressed a commitment to work together. For example, the IEEE and CEOs of manufacturing corporations provided testimony on the interconnection of distributed resources at a June 1999 Senate Energy and Natural Resources Committee hearing. There is a growing sense that a national approach involving industry and government in partnership is essential to ensure a viable market for distributed power.

Background

On 25 June 1998, the IEEE-SA Standards Board, encouraged by the IEEE membership, confirmed that a standards effort needed to be launched to address the needs of its members regarding distributed resources and the electric power system on a national level.

With this IEEE initiative to address all standards development activities for distributed resources and the electric power system came the expansion of the responsibilities of IEEE SCC21. This committee reports directly to the IEEE-SA Standards Board and oversees all standards development activities for distributed power resources. The scope of IEEE SCC21 includes not only photovoltaics, as initially sanctioned by the IEEE-SA Standards Board in 1981, but also all distributed generation and energy storage. The official title of the committee is now IEEE SCC21, Fuel Cells, Photovoltaics, Dispersed Generation, and Energy Storage. The new scope and committee responsibilities of IEEE SCC21 include overseeing the development of standards in these areas and ensuring that all such standards are consistent and reflect the views of all involved parties. In addition, IEEE SCC21 reviews all proposed IEEE standards in these fields before their submission to the IEEE-SA Standards Board for approval and coordinates submission to other organizations.

Since its initiation in March 1999, the P1547 Working Group has grown to over 300 members, with approximately 100 members attending meetings every other month. An IEEE SCC21 P1547 Web site (**http://grouper.ieee.org/groups/scc21/1547**) also has been established, with Department of Energy support, that has both a public and a working group interactive page for developing the interconnection standard. The support for this

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IEEE The *IEEE-SA Standards Bearer* is published quarterly by IEEE Standards Activities. **President of the IEEE Standards Association,** Donald C. Loughry; **Publisher,** Donald C. Fleckenstein; **Managing Director,** Judith Gorman; **Editor-in-Chief,** Susan K. Tatiner; **Editor** and **Designer,** Noelle D. Humenick; **Editorial Coordinator,** Linda Gargiulo; **Manufacturing,** Linda Sibilia; **Contributors,** Thomas Basso and John Day. If you would like to contribute articles, please write to the *IEEE-SA Standards Bearer* at 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331, USA, or via e-mail at **stds-bearer@ieee.org**. Third class postage paid at Piscataway, NJ. ISSN 08960-1425. This document is also available on the Web as a PDF at **http://standards.ieee.org/reading/ieee/SB/index.html.**

From the Chair of the IEEE-SA Standards Board

by Donald Heirman

By the numbers—we are on a hot pace!

We are now entering the final lap of our calendar year and, thus far, we have accomplished a great deal, with more to come. As of September, you have submitted to the New Standards Committee (NesCom) 38 new Project Authorization Requests (PARs): 14 PARs for new standards, 24 revision requests; and 44 extension requests, as reported by the NesCom chair, Lowell Johnson (**lowell.johnson@unisys.com**). To ensure that standards remain current and active, 29 standards have been withdrawn. The Standards Review Committee (RevCom) is also processing your work at a quickening pace, with 23 approval recommendations to the Standards Board in September alone, as noted by the RevCom chair, Jim Moore (**james.w.moore @ieee.org**). From the balloting activity perspective, this boils down to well over 200 ballots per year (including recirculations), with over 50 ballots conducted or in progress by electronic means. For the electronic ballots, the working groups process the information via e-mail and capture it in a balloting database. The electronic invitation, to make the process electronic from start to finish, is currently under development. For further information, contact Stephen Kahofer at **s.kahofer@ieee.org**.

To ensure that members understand these statistics, Mary Lynne Nielsen and Jodi Haasz, IEEE Standards Staff, have launched an initiative to quantify such metrics as number of incoming PARs per year, number of PARs approved each year, and time elapsed from PAR to published standard. The board is also interested in determining customer needs with regard to how long it takes to produce a standard.

These statistics will have to be viewed carefully, rather than issuing an "average" time for standards development. The board will get a further update at its December meeting, and I will pass that along to you.

In the background of these initiatives is our American National Standards Institute (ANSI) audit activity. The good news is that the IEEE has retained its accreditation subject to meeting certain changes in our standards procedures. The changes required for continued accreditation were approved by the Standards Board.

We also have an opportunity to submit proposals for changes in the ANSI procedures to be more in line with our special needs. We are preparing for that activity NOW. This has been quite a learning experience, which I believe has even further strengthened and supported our processes in the eyes of those outside of our standards community.

Be sure to read the companion articles in this newsletter. We are trying to keep you up to date, including going online with our newsletter by next year.

In conclusion, I wish you a happy holiday season and a great New Year 2001.

Important Changes to Coordination

The IEEE-SA Standards Board has been working this year on revisions to the existing process for coordination during standards development. The result is a streamlined coordination process that will give volunteer standards developers more flexibility in how they choose to coordinate with entities both within and outside of the IEEE. Effective 1 January 2001, the following policies will be in effect:

- The New Standards Committee (NesCom) will no longer recommend coordination on PARs
- The Review Committee (RevCom) will only review how mandatory coordination comments are addressed
- All non-mandatory coordination will be handled at the sponsor's discretion

Mandatory coordination will occur with SCC10 (Terms and Definitions), SCC14 (Quantities, Units, and Letter Symbols), and IEEE Standards Department editorial staff. Comments from these entities must be accepted by the sponsor, or the sponsor shall provide a rationale to RevCom as to why these comments are not accepted.

Sponsors are free to coordinate with any other entity via any means that the sponsor deems appropriate. However, non-mandatory coordination will not be reviewed by RevCom.

It should be noted that communication with external bodies is still encouraged through participation in standards working group activities and inclusion of appropriate persons in the balloting pools for standards projects.

Any questions concerning this new policy should be directed to Rona Gertz at **+1 732 562 3808** or at **r.gertz@ieee.org.**

Groundbreaking Storage System Standards Approved

The IEEE Standards Association (IEEE-SA) announces the approval of groundbreaking standards addressing Storage Systems. Sponsored by the Storage Systems Standards Committee of the IEEE Computer Society, IEEE standards 1244.1-2000, 1244.3-2000, 1244.4-2000, and 1244.5-2000 describe the IEEE Media Management System's (MMS) architecture, data model, core media management protocol, and drive management and library management protocols.

Based on the open source implementation of SGI's™ OpenVault™, IEEE standards 1244.1-2000, 1244.3-2000, 1244.4-2000, and 1244.5-2000 significantly extend and refine the OpenVault™ concepts. Users and implementers of these standards, which specify system and component behavior rather than content, will be enabled to create interoperable, distributed, fully scalable, platform neutral, and secure system products, free from restrictive licensing. The breakdown of the IEEE MMS into multiple standards allows for a granularity of conformance and also permits products from the greatest number of vendors.

The IEEE Computer Society's Storage Systems Standards Committee (SSSC) actively collaborates with other formal standards groups and industry to produce successful standards and minimize effort. Those interested in participating are encouraged to contact Jack Cole, SSSC Chair, **jack.cole@ieee.org,** or Curtis Anderson, Storage System Standards Working Group (SSSWG) Chair, **canderson@turbolinux.com.** A list of active IEEE projects of other MMS standards may be viewed at **http://www.ieee-sssc.org/projects.html.** Additional information is available at the SSSWG Web site (**http://www.ssswg.org/**).

IEEE-SA STANDARDS BOARD ACTIONS

Piscataway, NJ **21 September 2000**

APPROVED PARS FOR NEW STANDARDS

P802.11g (C/LM) Supplement to Standard [for] Information Technology—Telecommunications and Information Exchange Between Systems—LAN/MAN—Specific Requirements—Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications: Further Higher Data Rate Extension in the 2.4 GHz Band

P1003.13b (C/PA) Information Technology—Standardized Application Environment Profile—POSIX® Realtime Application Support (AEP)—Amendment for Extended Profiles

P1003.26 (C/PA) Information Technology—Portable Operating System Interface (POSIX®)—Part 2: Device Control Application Program Interface (API) [C Language]

P1368 (PE/T&D) Guide for Aeolian Vibration Field Measurements of Overhead Conductors

P1574 (PE/NPE) Recommended Practice for Conducting Human Reliability Analysis for Nuclear Power Generating Stations

P1575 (C/MM) Standard for Advanced Microcomputer Power Distribution System

PC37.04-1999/Cor 1-200x (PE/SWG) Standard Rating Structure for AC High-Voltage Circuit Breakers

PC62.22.2 (PE/SPD) Amendment 2 for High Voltage Insulation Coordination to IEEE Std C62.22, IEEE Guide for the Application of Metal-Oxide Surge Arresters for AC Systems

REVISED PARS

P1003.1 (C/PA) Information Technology—Portable Operating System Interface (POSIX®)

P1003.25 (C/PA) Information Technology—Portable Operating System Interface (POSIX®) Services for Reliable, Available, and Serviceable Systems [C Language]

P1073.1.3.1 (EMB/MIB) Standard for Medical Device Communications—Medical Device Data Language (MDDL) Medical Device Specializations—Infusion Device

P1073.1.3.2 (EMB/MIB) Standard for Medical Device Communications—Medical Device Data Language (MDDL) Medical Device Specializations—Vital Signs Monitor

P1073.1.3.3 (EMB/MIB) Standard for Medical Device Communications—Medical Device Data Language (MDDL) Medical Device Specializations—Ventilator

P1073.1.3.4 (EMB/MIB) Standard for Medical Device Communications—Medical Device Data Language (MDDL) Medical Device Specializations—Pulse Oximeter

P1073.1.3.5 (EMB/MIB) Standard for Medical Device Communications, (MDDL), Medical Device Specializations—Defibrillator

P1073.1.3.6 (EMB/MIB) Standard for Medical Device Communications, (MDDL), Medical Device Specializations—ECG

P1073.1.3.7 (EMB/MIB) Standard for Medical Device Communications, (MDDL), Medical Device Specializations—Blood Pressure

P1073.1.3.8 (EMB/MIB) Standard for Medical Device Communications, (MDDL), Medical Device Specializations—Temperature

P1073.1.3.9 (EMB/MIB) Standard for Medical Device Communications, (MDDL), Medical Device Specializations—Airway Flowmeter

P1073.1.3.10 (EMB/MIB) Standard for Medical Device Communications, (MDDL), Medical Device Specializations—Cardiac Output

P1073.1.3.11 (EMB/MIB) Standard for Medical Device Communications, (MDDL), Medical Device Specializations—Capnometer

P1073.1.3.12 (EMB/MIB) Standard for Medical Device Communications, (MDDL), Medical Device Specializations—Hemodynamic Calculator

P1073.1.3.13 (EMB/MIB) Standard for Medical Device Communications, (MDDL), Medical Device Specializations—Pulmonary Calculator

P1073.1.3.14 (EMB/MIB) Standard for Medical Device Communications, (MDDL), Medical Device Specializations—Respirator

P1073.1.3.15 (EMB/MIB) Standard for Medical Device Communications, (MDDL), Medical Device Specializations—Scale

P1215 (PE/T&D) Guide for the Application of Separable Insulated Conductors

P1216 (PE/T&D) Guide for the Application of Faulted Circuit Indicators for 200 A, Single-Phase Underground Residential Distribution (URD)

P1284.3 (C/MM) Standard for Interface and Protocol Extensions to IEEE Std 1284, Compliant Peripherals and Host Adapters

PC57.106 (PE/TR) Guide for Acceptance and Maintenance of Insulating Oil in Equipment

PARS FOR REVISIONS OF STANDARDS

P303 (IA/PCI) Recommended Practice for Auxiliary Devices for Motors in Class I, Group A, B, C, and D, Division 2 Locations

P524 (PE/T&D) Guide to the Installation of Overhead Transmission Line Conductors

P754 (C/MM) Standard for Binary Floating-Point Arithmetic

P802.3ag (C/LM) Information Technology—Telecommunications and Information Exchange Between Systems—LAN/MAN—Specific Requirements—Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications

P928 (SCC21) Recommended Criteria for Terrestrial Photovoltaic Power Systems

P1100 (IA/PSE) Recommended Practice for Powering and Grounding Electronic Equipment

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

P1489 (SCC32) Standard for Data Dictionaries for Intelligent Transportation Systems

PC37.102 (PE/PSR) Guide for AC Generator Protection

PC37.118 (PE/PSR) Standard for Synchrophasors for Power Systems

PC57.12.59 (PE/TR) Guide for Dry-Type Transformer Through-Fault Current Duration

PC62.43 (PE/SPD) Guide for the Application of Surge Protectors Used in Low-Voltage (Equal to or Less Than 1000 Vrms or 1200 Vdc) Data, Communication, and Signaling Circuits

WITHDRAWN PARS

P802.1r (C/LM) Supplement to ISO/IEC 15802-3 (802.1D): Information Technology—Telecommunications and Information Exchange Between Systems—LAN/MAN—Common Specifications—Part 3: Media Access Control (MAC) Bridges—GARP Proprietary Attribute Registration Protocol (GPRP)

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

P1474 (VT) Standard for Communications Based Train Control

P1520 (COM) Standard Application Programming Interfaces for Networks: Service/Signaling Control and Switch Control and Programming Interfaces

NEW STANDARDS

1003.1q (C/PA) Standard for Information Technology—Portable Operating Systems Interface (POSIX®)—Part 1: System Application Program Interface (API)—Amendment 7: Tracing [C Language]

1073.3.1a (EMB/MIB) Standard for Medical Device Communications—Transport Profile—Connection Mode, Amendment 1: Corrections and Clarifications

1284.3 (C/MM) Standard for Interface and Protocol Extensions to IEEE Std 1284 Compliant Peripherals and Host Adapters

1471 (C/SE) Recommended Practice for Architectural Description for Software-Intensive Systems

1516 (C/SISC) Standard for Modeling and Simulation (M&S) High Level Architecture (HLA) — Framework and Rules

1516.1 (C/SISC) Standard for Modeling and Simulation (M&S) High Level Architecture (HLA) — Federate Interface Specification

1516.2 (C/SISC) Standard for Modeling and Simulation (M&S) High Level Architecture (HLA) — Object Model Template (OMT) Specification

ABBREVIATIONS

C/DA	Computer/Design Automation
C/LM	C/LAN/MAN
C/MM	C/Microprocessors & Microcomputers
C/PA	Portable Applications
C/SE	C/Software Engineering
C/SISC	C/Simulation Interoperability
C/TT	C/Test Technology
COM	Communications
EMB/MIB	Engineering in Medicine and Biology/Medical Information Bus
IA/PCI	Industrial Applications/Petroleum & Chemical
IA/PSE	IA/Power Systems Engineering
PE/IC	Power Engineering/Insulated Conductors
PE/EM	PE/Electric Machinery
PE/NPE	PE/Nuclear Power Engineering
PE/PSC	PE/Power System Communications
PE/PSR	PE/Power System Relaying
PE/SPD	PE/Surge Protective Devices
PE/SUB	PE/Substations
PE/SWG	PE/Switchgear
PE/T&D	PE/Transmission & Distribution
PE/TR	PE/Transformers
R	Reliability
SCC04	Electrical Insulationn
SCC20	Test and Diagnosis for Electric Systems
SCC21	Photovoltaics
SCC32	Intelligent Transportation Systems
VT	Vehicular Technology

1532 (C/TT) Standard for In-System Configuration of Programmable Devices

1546 (SCC20) Guide for Digital Test Interchange Format (DTIF) Application

C57.127 (PE/TR) Trial-Use Guide for the Detection of Acoustic Emissions from Partial Discharges in Oil-Immersed Power Transformers

C57.136 (PE/TR) Guide for Sound Level Abatement and Determination for Liquid-Immersed Power Transformers and Shunt Reactors Rated Over 500 kVA

C62.37.1 (PE/SPD) Guide for the Application of Thyristor Surge Protective Devices

REVISED STANDARDS

379 (PE/NPE) Standard Application of the Single-Failure Criterion to Nuclear Power Generating Station Safety Systems

404 (PE/IC) Standard for Extruded and Laminated Dielectric Shielded Cable Joints Rated 2500 to 500 000 V

487 (PE/PSC) Recommended Practice for the Protection of Wire-Line Communication Facilities Serving Electric Supply Locations

576 (IA/PCI) Recommended Practice for Installation, Termination, and Testing of Insulated Power Cable as Used in Industrial and Commercial Applications

1076.4 (C/DA) Standard VITAL ASIC (Application Specific Integrated Circuit) Modeling Specification

1284 (C/MM) Standard Signaling Method for a Bidirectional Parallel Peripheral Interface for Personal Computers

1379 (PE/SUB) Recommended Practice for Data Communications Between Remote Terminal Units and Intelligent Electronic Devices in a Substation

C62.92.1 (PE/SPD) Guide for the Application of Neutral Grounding in Electrical Utility Systems, Part I—Introduction

REAFFIRMATION

99-1980 (R1992) (SCC04) Recommended Practice for the Preparation of Test Procedures for the Thermal Evaluation of Insulation Systems for Electric Equipment

716-1995 (SCC20) Standard Test Language for All Systems—Common/Abbreviated Test Language for All Systems (C/ATLAS)

C62.33-1982 (R1994) (PE/SPD) Standard Test Specifications for Varistor Surge-Protective Devices

CONDITIONS MET

1240 (PE/SUB) Guide for the Evaluation of the Reliability of HVDC Converter Stations

1255 (PE/EM) Guide for Evaluation of Torque Pulsations During Starting of Synchronous Motors

C57.12.44 (PE/TR) Standard Requirements for Secondary Network Protectors

TRIAL-USE STANDARD UPGRADE TO FULL-USE

1406-1998 (PE/IC) Guide to the Use of Gas-In-Fluid Analysis for Electric Power Cable Systems

1407-1998 (PE/IC) Guide for Accelerated Aging Tests for Medium-Voltage Extruded Electric Power Cables Using Water-Filled Tanks

Highlights of the September 2000 IEEE Standards Association Standards Board Meeting Series

The IEEE Standards Association (IEEE-SA) Standards Board held its meeting series on 19–21 September 2000. Following are highlights:

- The Standards Review Committee (RevCom) held its first supplemental meeting on 21 September 2000 with the aim of identifying ways to improve the committee's submittal process. The facilitator and Chair, Jim Moore, has scheduled a second meeting during the IEEE-SA Standards Board December series in New York City.
- The Chair of the IEEE-SA Standards Board, Don Heirman, will be sending a letter to all IEEE societies and standards coordinating committees (SCCs) involved in standards development, indicating that it is the Board's desire for committees to move toward the exclusive use of the IEEE-SA Balloting Center and electronic balloting.
- A schedule for the continuous processing of Project Authorization Requests (PARs) was approved by the New Standards Committee (NesCom). Chair Lowell Johnson reported that this information will be posted on the IEEE-SA Web site. For further information, contact Jodi Haasz at **j.haasz@ieee.org.**
- The Procedures Committee (ProCom), chaired by Bob Kennelly, approved several recommended changes to the IEEE-SA procedures and bylaws. While details will be broadly distributed at the beginning of 2001, when the relevant "manuals" are updated, some items of interest are listed here. (a) The observer category will be eliminated from the balloting process due to lack of use. (b) Handwritten changes and marked-up drafts will not be acceptable effective 2001. (c) The Standards Board will ballot to modify its bylaws to change the composition of ProCom from a maximum of six to a minimum of six members.
- Jim Gurney, Chair of the Audit Committee (AudCom), made the following motions, which were approved.

  Motion 1

  The IEEE-SA Standards Board requests the IEEE-SA and IEEE legal counsel to investigate and advise, by the December 2000 Standards Board meeting, IEEE's legal exposure and the review role of IEEE-SA with respect to all non-IEEE standards activities for which the IEEE-SA has administrative responsibility. The review is to include issues of risk, liability, indemnification, insurance coverage, intellectual property, management oversight, and relation to the IEEE Bylaws.

  Motion 2

  Given the significant implications of the WTO/TBT document for achieving recognition of IEEE-SA as an international standards developer, the IEEE-SA Standards Board recommends that the IEEE-SA Board of Governors actively pursue involvement of the IEEE-SA in the forthcoming revision of the Technical Barriers to Trade document through appropriate national trade channels.
- Jim Carlo, Vice Chair of the IEEE-SA Standards Board, reported that the Board's "chat area" will be implemented immediately. Board members will receive a password, an e-mail address, and the topics for discussion. For more information, contact Rona Gertz at **r.gertz@ieee.org.**
- Jim Carlo, in his capacity as Chair of the IEEE 802 Committee, reported that the 802 group is coordinating with the European Telecommunications Standards Institute (ETSI) in two areas: 802.11a/HiperLan2, and 802.16/Fixed Wireless. This coordination is a result of the IEEE/ETSI Memorandum of Understanding.

IEEE-SA Standards Bearer Now Online

To view the Standards Bearer Online, please go to the IEEE Standards Web site at **http://standards.ieee.org** and click on the IEEE-SA Standards Bearer Online icon.

The IEEE-SA Standards Bearer Online is a dynamic news service for all interested in IEEE Standards activities. Continually updated, it covers today's activities that impact the IEEE Standards process and provides the latest information on events and working group and committee developments. The IEEE-SA Standards Bearer Online will include:

- News and articles
- IEEE-SA Standards Board meeting highlights and actions
- IEEE-SA Board of Governors meeting highlights
- Awards information
- Messages from the Board of Governors President and Standards Board Chair
- Hot links to other IEEE e-news sites

Beginning in 2001, the print edition of the IEEE-SA Standards Bearer will be discontinued and the IEEE-SA Standards Bearer Online will take its place. Housed on the Web, the IEEE-SA Standards Bearer Online will be updated frequently throughout the year and readers can visit the site at their convenience to get the most current IEEE-SA news. If readers prefer to receive an automatic e-mail to notify them that new information has just been added to the IEEE-SA Standards Bearer Online, they can subscribe to an alert service. To do so, simply send an e-mail message to **majordomo@majordomo.ieee.org** and include in the body of the message "subscribe bearer@ieee.org."

New Areas Added to IEEE-SA Web Site

We recently added a few new areas to our Web site. Check them out!

Wireless Zone

http://standards.ieee.org/wireless

An area dedicated to our wireless standards activities.

Color Books Zone

http://standards.ieee.org/colorbooks

An area dedicated to our popular Color Books, which cover industrial and commercial power systems. Here you will also find the Color Books sampler that was distributed via CD ROM at the IAS meeting that was held in Rome in September.

Awards Spotlight

Edward P. Priebe, IEEE Std 11-2000, IEEE Standard for Rotating Electric Machinery for Rail and Road Vehicles

Richard P. Keil, IEEE Std 80-2000, IEEE Guide for Safety in AC Substation Grounding

David Law and **Geoffrey O. Thompson**, IEEE Std 802.3, 2000 Edition, IEEE Standard for Carrier Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications

Bob Rafferty and **George Tarbutton,** IEEE Std 844-2000, IEEE Recommended Practice for Electrical Impedance, Induction, and Skin Effect Heating of Pipelines and Vessels

Jay L. Chamberlin, IEEE Std 937-2000, IEEE Recommended Practice for Installation and Maintenance of Lead-Acid Batteries for Photovoltaic (PV) Systems

Jay L. Chamberlin, IEEE Std 1013-2000, IEEE Recommended Practice for Sizing Lead-Acid Batteries for Photovoltaic (PV) Systems

Terry Arnold, Lily Chen, Don Johnson, Burt Kaliski, David Kravitz, Dan Lieman, Michael Markowitz, Alfred Meneze, Leonid Reyzin, Allen Roginsky, Roger Schlafly, Ari Singer, Jerome Solinas, William Whyte, Yiqun Lisa Yin, and **Robert Zuccherato,** IEEE Std 1363-2000, IEEE Standard Specifications for Public-Key Cryptography

John Nels Fuller, Jerry Hauck, Peter Johansson, James Skidmore, Colin Whitby-Strevens, and **David Wooten,** IEEE Std 1394a-2000, IEEE Standard for a High Performance Serial Bus—Amendment 1

W. M. (Bill) McDermid, IEEE Std 1434-2000, IEEE Trial-Use Guide to the Measurement of Partial Discharges in Rotating Machinery

Chester H. Chandler, Gina Field, Wayne Gisler, and **Andrew MacFarlane,** IEEE Std 1512-2000, IEEE Standard for Common Incident Management Message Sets for Use by Emergency Management Centers

F. Dong Tan, IEEE Std 1515-2000, IEEE Recommended Practice for Electronic Power Subsystems: Parameter Definitions, Test Conditions, and Test Methods

Jonathan D. Gardell, IEEE Std C37.96-2000, IEEE Guide for AC Motor Protection

Daniel H. Mulkey, IEEE Std C57.12.44-2000, IEEE Standard Requirements for Secondary Network Protectors

Subhash C. Tuli, IEEE Std C57.12.90-1999, IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers

Plan Implemented to Ensure Global Market Awareness of IEEE Standards

by John Day

During the first quarter of 2000, the IEEE Standards Association (IEEE-SA) launched an ambitious, multifaceted strategy to increase the global and market awareness of IEEE Standards. Composed of four integrated components, the plan addresses the issues of products and services, marketing and sales infrastructure, market intelligence network, and industry channel strategy.

Products and Services—The IEEE-SA will continue to devote more time to new product development and the repackaging of existing products, according to market demand and industry channels. The repackaging effort will focus on the contributions of several standards-developing working groups, to provide the best solution for serving the needs of a global marketplace.

Sales and Marketing Infrastructure—Increasing market awareness demands that the IEEE-SA staff be responsive to customer inquiries and able to anticipate future needs. These tasks need to be accomplished with a lean and effective staff. To that end, a robust customer relationship management tool is being implemented. The tool automates many processes, reduces redundant effort, and enhances the ability of the IEEE-SA to be more responsive to the demands of a diverse customer base and rapidly changing marketplace.

Market Intelligence Network—Fundamental to its preparedness to serve a more demanding global market, the IEEE-SA will take a lead role in identifying and tracking market news and trends relevant to standards development activities at the IEEE. Improved market awareness and research will assist the IEEE-SA in identifying new markets for IEEE standards, as well as ensure more targeted product development to better serve industry and global needs.

Industry Channel Strategy—Building awareness for IEEE standards can leverage and support the efforts of other organizations that serve similar markets. In developing its presence in industry, the IEEE-SA will explore creating joint ventures and affinity programs with trade associations and other organizations. To enhance its global outreach, the IEEE-SA is paying special attention to trade organizations with an international membership, as well as those organizations based outside of the United States.

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IEEE activity, both from IEEE members and the electric power community at large, has been overwhelming on a national level and has been recognized for its importance at the international level by the International Electrotechnical Commission (IEC).

Recent developments in linking the U.S. distributed power standards development activities with global standards activities have influenced the establishment of an IEC international Joint Coordination Group (JCG) for "Decentralized Renewable Energy Systems" (DRES), which officially formed in Paris, France, on 3 March 2000. With decentralized rural electrification projects being implemented in developing countries, there is a need for standards to be developed and used as references for assessing the quality of these systems. This JCG is chaired by Richard DeBlasio in coordination with IEC Technical Committees, TC82 (PV Solar Energy Systems), TC88 (Wind Turbine Systems), and TC21 (Secondary Cells and Batteries). Other technical committees are being invited to join from over 40 member countries. The U.S. will lead this effort as convener and chair and France will act as project leader. This is a major link for IEEE SCC21 to the world standards developing community and will play a major role in facilitating international understanding, harmonizing requirements, and negotiating reciprocity of testing requirements and equipment-system certification.

Status

Draft 6 of P1547 will be ready in late December 2000 for review by the P1547 Working Group at its January 2001 meeting. The development of the standard has followed a process that allows the working group to develop a resource pool of material that includes recommended data for serious consideration, as well as requirements and tests.

The working group has addressed testing requirements and is currently concentrating on "interconnection tests" and "interconnection installation evaluation." Although there are families of tests and procedures, none exist today that can be completely adopted for use in verifying interconnection requirements for both hardware and software interconnection technology and fielded system operation. The development of these tests and acceptance procedures as standards is essential to removing technical barriers to interconnection.

Conclusion

Distributed power generation has much promise to improve distribution system performance. However, a significant issue is that distribution system designs are normally based on radial power flows, which causes some technical difficulties with the successful implementation of distributed power. This article addresses some of the issues being considered and resolutions being proposed through IEEE SCC21 activities. However, there are other issues not covered here, such as the nontechnical barriers to interconnection (e.g., regulatory, business, siting). The participation of the distributed power community in the IEEE SCC21 P1547 standard activity appears to be a model for what is needed in other areas of distributed generation deployment—education, cooperation, and commitment by all parties. Many state governments are also moving toward developing interconnection standard agreement protocols and have attempted to include technical requirements; however, system size limitations typically become an issue, and the decisions usually revert back to doing onsite specific studies, which often cost more than the distributed generator or project itself. All these efforts are commendable, but the technical requirements and testing procedures are being referred back to IEEE SCC21 to produce a national standard. The members of IEEE SCC21 are committed to this task, and are determined to meet their objective of producing a national standard, which will be a "living document" to be revised over time with technological advances.

The key to a complete interconnection infrastructure, including a body of standards, will require adopting uniform technical standards for interconnecting distributed power resources with the electric power system of today (grid), developing and adopting testing and certification procedures for interconnection hardware and software, and accelerating development of distributed power control and communication technology, equipment, and systems.

Development and validation of industry-developed products, such as distributed and electric power system architecture design criteria, characterization and certification tests, educational and training tools, technical standards, models, etc., will require a central interface technologies characterization test and evaluation capability. This will be critical in the near term, since validation will be necessary to establish the technical basis for requirements mandated by P1547 and future related standards activities. Therefore, the establishment of a testing infrastructure within the industry is essential to success.

It is interesting to note that Thomas Edison's first power facility, the New York City Pearl Street Station, would qualify as a distributed generator today. We evolved from this first venture into major power plants that are radial, with interconnected electromechanical-controlled grids. Distributed power is transforming this into an electronically controlled open-access system, and improved interconnection is the key to this transformation. The IEEE P1547 Interconnection Standard should prove to be a benchmark for both the IEEE standards consensus process and the development of further national standards for our electric power system.

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