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IEEE-ISTO Offers a Complementary Forum for Standards-Related Activities

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Introduction

The IEEE Industry Standards and Technology Organization (IEEE-ISTO) was approved by the IEEE Board of Directors on 15 November 1998, and was officially launched on 1 January 1999. The concept of the IEEE-ISTO, an independent, financially self-supporting, not-for-profit corporation, tax exempt under a different tax status than that of IEEE, was proposed by the IEEE Standards Association (IEEE-SA) in mid-1998, and approved by the IEEE-SA Board of Governors in September 1998 for submission to the IEEE Board of Directors for approval.

The formation of this organization signaled IEEE's recognition and response to the changes in the standards development environment in many of the IEEE-related industries, and the need to be able to offer a complete menu of alternative, yet complementary, standards development options and services that the IEEE cannot offer due to its current non-profit tax status. The formation and activities of the IEEE-ISTO are very much in line with the overall Strategic Plan of the Institute.

The emphasis toward interoperability and convergence of the telecommunications, information technology, and the utilities industries has exposed many new challenges to the standards development organizations, and the industries that rely on standards in the marketplace. Product development cycles in many industries are now measured in months and weeks, rather than years. As a result the development of the underlying standards that make the products work together must also keep pace. Many times products are released as the standards committees work to achieve consensus. The 56K modem standards debate was a good example of this. Products based on proposed standards were introduced in the marketplace in advance of the final standard being approved by the International Telecommunications Union (ITU). The debate gained global attention as many Internet Service Providers and consumers delayed their adoption of the 56K modems until the ITU approved the final standard.

The IEEE is facing similar challenges to meet the needs of the industry and the standards development community it supports. With the formation of hundreds of standards and specification development groups outside of the auspices of the IEEE organized as consortia, alliances, and special interest groups, industry has clearly signaled their need for alternative standards development processes and services. With the IEEE Standards Association and the IEEE-ISTO, the IEEE is strongly positioned to offer its societies, and the industries it supports, unprecedented choice and flexibility through a complete menu of standards activities and services.

The Purpose of the IEEE-ISTO

The IEEE-ISTO offers industry groups (e.g., consortia, special interest groups, alliances, forums, working groups) an innovative and flexible operational forum and support services for development and post-development standards and technology development activities. The

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IEEE-ISTO operates as an umbrella organization to provide the legal forum for industry groups to operate without the need to incorporate themselves as a legal entity.

The IEEE-ISTO enables developers to define their unique rules and procedures to build a foundation tailored to the technology, the market, the participants, the required time-frame, and the financial and human resources available to achieve their goals. The organization provides a forum not only to develop standards, but also to facilitate the activities that support the implementation and acceptance of standards in the marketplace.

The IEEE-ISTO supports industry-related standards activities that, in many cases, will result in parallel or linked projects, where a consensus standard is developed under the IEEE Standards Board and supported by a post-development or parallel activity within the IEEE-ISTO. Additionally, the resulting IEEE-ISTO Industry Group Standards could serve as the basis for an IEEE Project Authorization Request (PAR) to be submitted through IEEE-SA's Society sponsored voluntary consensus process for approval as an IEEE Standard by the IEEE-SA Standards Board.

Relationship Between the IEEE and the IEEE-ISTO

One of the most important aspects of the IEEE-ISTO is its relationship to the IEEE. The IEEE-ISTO is organized as a legally independent organization that is responsible and accountable for its own actions. Although the IEEE-ISTO is of necessity independent in its operations and governance, there are strong built-in linkages to the IEEE set forth primarily in the IEEE-ISTO's Bylaws (http://www.ieee-isto.org/ieee_isto_bylaws.pdf), and a license agreement entered into between the two organizations.

The IEEE-ISTO is a membership organization in which the IEEE is the sole member. The IEEE Executive Director appoints the IEEE-ISTO staff (two of the three IEEE-ISTO Officers). The IEEE and the IEEE-SA each may appoint a representative to serve in a liaison role to the IEEE-ISTO. In mid-1999, Don Loughry, current IEEE-SA President, and Dan Senese, IEEE Executive Director, were appointed to serve as Representative of the IEEE-SA and Representative of the Member respectively.

The IEEE-SA Board of Governors recommends, and the IEEE Board of Directors approves the slate of candidates for the IEEE-ISTO Board of Directors (IEEE-ISTO BoD). The business and affairs of the IEEE-ISTO are managed by its President and Secretary Treasurer, under the direction of the IEEE-ISTO BoD. In addition, the IEEE-ISTO BoD shall have the full power and authority with respect to the following:

- Approval of Participant Group applications and agreements
- Providing financial oversight
- Serving as an industry representatives to promote the use of the IEEE-ISTO by organizations in their industry
- Approval of IEEE-ISTO's output and products.

The first IEEE-ISTO Board of Directors was appointed by the IEEE Board of Directors in November 1999 to serve a two-year term commencing 1 January 2000. The IEEE-ISTO Board of Director appointees are: George W. Arnold, Vice President, Standards & Intellectual Property, Lucent Technologies Bell Laboratories; Richard J. Holleman, Director of Standards, Intellectual Property & Licensing, IBM Corporation; Marco W. Migliaro, P.E., Chief Electrical/I&C Engineer, Nuclear Division, Florida Power & Light Company; and Edward M. Roney, Corporate Vice President and Director of Standards and Technology Transfer, Motorola, Inc.

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The IEEE-ISTO Bylaws create a meaningful relationship between the necessary independence of the IEEE-ISTO, required to protect IEEE's tax status and from liability for the actions of the IEEE-ISTO. There is a strong desire to establish meaningful complementary arms length interactions between the IEEE and the IEEE-ISTO to effect strong standards programs that serve a wide spectrum of customer interests.

Benefits of the IEEE-ISTO

As an innovative and necessary complement to the IEEE-SA, the IEEE-ISTO will be a resource to the IEEE, its Societies, and industry for new partnerships, new standards and other relevant activities.

Stepehn C. Lowell, the first place winner of the 1999 World Standard Day Paper Competition, offered an excellent overview of the complementary aspects of the formal standards process (e.g., IEEE Standards Association) and the "consortia standards process" (e.g., the IEEE-ISTO) in "The Yin and Yang of Standards Development (Stephen C. Lowell)". The document can be found on the IEEE-ISTO's website at, http://www.ieee-isto.org/yin_yang_stds.pdf. The IEEE was referenced to illustrate an example of an innovative organization that has forged a symbiotic relationship between the two different processes that takes advantage of each other's strengths, the IEEE Standards Association and the IEEE-ISTO.

IEEE and Its Societies:

IEEE Societies are able to sponsor programs under the IEEE-SA Standards Board, the IEEE-ISTO, or both, depending on the methods, resources, and activities necessary to meet the project's goals. Many industries continue to require standards developed in accordance with the IEEE's voluntary standards process, and may not require the IEEE-ISTO as a forum for its standards development and related activities. The two organizations are a perfect complement to each other. This complementary relationship has already been successfully demonstrated through the activities of the first three programs of the IEEE-ISTO. Each program either supports an IEEE Standard, or has been recognized by an IEEE Society.

The IEEE-ISTO will enable the Societies that have expended considerable effort developing IEEE Standards to see that programs are created and sponsored to effect the implementation and adoption of the standards in the marketplace. Industry Group Standards developed under the IEEE-ISTO provide a built-in source for new activities under the sponsorship of the IEEE Societies. All of these partnering activities are designed to increase the visibility of IEEE Society efforts and provide opportunities to further enhance the careers of IEEE's volunteers. The IEEE-ISTO will serve as a forum to facilitate new activities and provide the IEEE and its Societies with increased recognition and relevance to industry.

Industry:

The IEEE-ISTO provides the legal infrastructure and support services under which industry-specific programs and related technology development activities can be organized. Programs to support marketing, certification, patent and intellectual property licensing administration, standards development, interoperability demonstrations, branding, conformity assessment, and cooperative research are among the various types of programs that can be conducted as a program of the IEEE-ISTO.

The IEEE-ISTO is structured to facilitate cost-effective, stable programs in support of any new or emerging technology that requires rapid development of standards and specifications to meet product schedules, and to attain market acceptance. Participant groups can mobilize and maintain their unique identity without the need to develop their own "do-it-yourself" organization where technical staff perform administrative functions, and without the risk associated with participating in an unincorporated association.

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IEEE-ISTO Operations

The IEEE-ISTO provides a complete menu of comprehensive management and operational resources, from formation to ongoing facilitation, administration and management of an industry group's daily activities. The services provided can be customized to meet the needs and objectives of each group. The IEEE-ISTO can provide all of the ongoing support functions that allow the members and leadership to focus their efforts on the technical goals of the effort.

Secretariat Resources:

The IEEE-ISTO offers industry groups a core set of services that allows them to create, manage, and distribute benefits to their membership and supporters. These services include, but are not limited to: formation assistance, financial management, patent and intellectual property (IP) management, record keeping, membership support, meeting planning, and management, forum activities, headquarters office services and identity, publication and document management, on-line services and communications, general promotion, marketing, and press relations.

Financial Model:

The IEEE-ISTO is self-supporting through fees for services and infrastructure provided to each participant group. Each industry group will establish and approve its own budget and service requirements. The standards and specifications developed will be distributed as freely as the individual industry groups require and fund. It is anticipated that any sale of standards are to represent cost recovery rather than a stable or predictable revenue stream to the IEEE-ISTO.

The IEEE-ISTO will distribute completed IEEE-ISTO Industry Group Standards any way the Participant Group desires. This could include the traditional subscription methods now in use for IEEE Standards, but if the Participant Group chooses, they could subsidize free or low-cost distribution in any medium, from paper to the Internet.

Procedures:

The procedures the IEEE-ISTO follows have been carefully structured towards two goals:

- Ensure that its activities are complementary to the IEEE's standards development activities under the IEEE-SA
- Ensure safeguards are in place to guarantee that IEEE-ISTO Industry Group Standards will be produced with sufficient quality, rigor, discipline, and fairness to deserve the label "IEEE-ISTO" in their title.

In many ways, the IEEE-SA and the IEEE-ISTO will be similar: groups of experts will work together to draft and then vote on complex technical issues. The largest difference between the two programs is that the IEEE-SA procedures are tightly prescribed and practiced fairly, and uniformly across all standards activities, while the IEEE-ISTO procedures are fair, flexible, uniquely tailored to the needs of each Participant Group, and responsive to the particular technology, the market, and to other relevant factors.

The IEEE-ISTO will enable industry groups to tailor and customize their procedures, including but not limited to: scope and nature of technical program, membership, voting, consensus requirements, and structure. The IEEE-ISTO Board of Directors will approve each program's unique procedures and output as a condition of operating as a program of the IEEE-ISTO.

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Products and Services

The IEEE-ISTO will be able to provide development facilities and support for industry group standards, specifications, and guides, but also for educational and promotional work after approval, including conformity assessment, marketing the acceptance of the standard, branding, patent licensing administration, among other activities at the request of each program. The IEEE-ISTO will also provide a corporate environment in which industry groups can form and engage in pre-development planning. All products of the IEEE-ISTO will have clearly distinguished labels and descriptions that show their origin.

Industry Programs of the IEEE-ISTO

Currently three industry groups have chosen to organize as programs of the IEEE-ISTO:

- Medical Device Communications Industry Group
- Printer Working Group
- Nexus 5001 Forum

All three programs have unique ties to either an IEEE Standard or Society.

The IEEE-ISTO is also currently at various stages of discussion with a number of potential industry groups who are actively evaluating the IEEE-ISTO as the "home" for their programs. The groups are currently formed independent of any formal standards organization, and a few are in very early formative stages.

Each group has one thing is common: they are interested in working with the IEEE-ISTO while maintaining their unique identity, rules and procedures, and engaging the IEEE-ISTO's administrative and management resources to provide organizational support for their program. Many of the groups are currently operating as an unincorporated association, which carries many risks for those companies who participate. In addition, the groups often have very technical people handling routine administrative functions of the organization (e.g., meeting planning, invoice collecting). The IEEE-ISTO meets a real need within these industry groups, and there has been a significant positive response to the IEEE-ISTO's formation and operations.

Additionally, the groups have indicated their interest in submitting the resulting IEEE-ISTO Industry Group Standards through the IEEE process for approval as an IEEE Standard. They understand the distinctions and differences between the two processes, and will look toward the IEEE once the standard has been tested, implemented and stabilized. The IEEE-ISTO Industry Group Standard could then serve as the baseline draft for IEEE Standardization.

The Nexus 5001 Forum™, a program of the IEEE-ISTO

On 23 September 1999, the Nexus 5001 Forum™ (formerly known as the Global Embedded Processor Debug Interface Consortium - formed in April 1998) announced its transition to become a program of the IEEE-ISTO.

The Nexus 5001™ Forum is chartered to define and develop a much-needed embedded processor debug interface standard for embedded control applications. Members of the Nexus 5001™ Forum represent all aspects of the technologies required for embedded control applications: embedded processor suppliers, independent tools providers, semiconductor and hardware development tools, and software tools (emulators, compilers, simulators, debuggers, RTOS's, etc.).

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The group has submitted Version 1.0 of their standard to the IEEE-ISTO for publication, distribution, and future management as IEEE-ISTO 5001™ - 1999, The Nexus 5001 Forum™ Standard for a Global Embedded Processor Debug Interface. The standard will be available, for free download from the IEEE-ISTO web site, in December 1999. IEEE-ISTO 5001-1999 will be distributed as the first industry group standard of the IEEE-ISTO. The IEEE Vehicular Technology Society has indicated its support and future sponsorship of the standard when the group desires to submit the IEEE-ISTO Industry Group Standard to the IEEE for approval and adoption as an IEEE Standard.

Additional information can be found on the Nexus 5001™ Forum's web site at, http://www.ieee-isto.org/Nexus5001/.

Medical Device Communications Industry Group (MDCIG), a program of the IEEE-ISTO

In mid-February 1999, the MDCIG was established as the first program to operate within the IEEE-ISTO. The group is organized to support and promote the activities and adoption of the IEEE 1073 (Medical Information Bus) Standards. The MDCIG provides a forum for medical device manufacturers to work together to support and accelerate the development of the IEEE 1073 Standards, as well as market and demonstrate the capabilities of standardized medical data communications.

Additional information can be found on the MDCIG's web site at, http://www.ieee-isto.org/mdcig/.

Printer Working Group (PWG), a program of the IEEE-ISTO

On 23 September 1999, the Printer Working Group and the IEEE Industry Standards and Technology Organization announced an alliance formalizing the PWG as a program of the IEEE-ISTO. The IEEE-ISTO provides the PWG with both an operational legal forum and support services to facilitate its day-to-day activities.

The PWG has been actively developing printer industry standards since 1991 (pre-1993 as the Network Printing Alliance) as an alliance among printer manufacturers, printer server developers, operating systems providers, network operating system providers, network connectivity vendors, and print management application developers. The group is chartered to develop the standards necessary to make printers and the applications and operating systems supporting them work together better.

The PWG supports the development of Standards within the IEEE (IEEE 1394 printing extensions and IEEE 1284) and IETF (Internet Printing Protocol (IPP)).

Additional information can be found on the PWG's web site at, http://www.pwg.org.

Contact the IEEE-ISTO

For more information about the IEEE-ISTO, visit the web site (http://www.ieee-isto.org) or contact Peter Lefkin, Secretary Treasurer and CFO at p.lefkin@ieee.org or by phone at 732-562-3802.

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