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IEEE P1003.0 Draft 13 – September 1991

(1) Specification of additional standards or options that will make the profile useful for specific locales (character sets, etc.)

(2) Pointers to the referenced standards and information on ordering these

(3) Pointers to related specifications that may provide additional insight or potentially serve to fill gaps in the profile

(4) Comments and concepts in using the profile for various target readers. This could include use in procurements (perhaps cross referencing related procurement standards like the FIPS in the US). The annex may be used to provide recommendations for use that are not warranted in the standard (e.g., ''Algol is not recommended for new applications development'').

Annex B
(informative)

Bibliography

HLJ : This annex should include references to standards, books, articles, etc., that are not required for an integral understanding of the document (as are the entries in Normative References). I have enclosed some samples that you should match in style, but not necessarily in selection content:

{B1} ISO 7498: 1984, *Information processing systems—Open Systems Interconnection—Basic Reference Model.* [1)]

{B2} ISO 8072: 1986, *Information processing systems—Open Systems Interconnection—Transport service definition.*

{B3} ISO/IEC 8073: 1988, *Information processing systems—Open Systems Interconnection—Connection oriented transport protocol specification.* [2)]

{B4} CCITT Recommendation X.25, *Interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCT) for terminals operating in the packet mode and connected to public data networks by dedicated circuit.* [3)]

{B5} CCITT Recommendation X.212, *Information processing systems—Data communication—Data link service definition for Open Systems Interconnection.*

{B5} ANSI X3.113-1987 [4)], *Information systems—Programming language— FULL BASIC.*

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1) ISO documents can be obtained from the ISO office, 1, rue de Varembé, Case Postale 56, CH-1211, Genève 20, Switzerland/Suisse.

2) IEC documents can be obtained from the IEC office, 3, rue de Varembé, Case Postale 131, CH-1211, Genève 20, Switzerland/Suisse.

3) CCITT documents can be obtained from the CCITT General Secretariat, International Telecommunications Union, Sales Section, Place des Nations, CH-1211, Genève 20, Switzerland/Suisse.

4) ANSI documents can be obtained from the Sales Department, American National Standards Institute, 1430 Broadway, New York, NY 10018.

{B6} IEEE Computer Society Technical Committee on Operating Systems and Application Environments Standards Subcommittee. *TCOS -SSC POSIX Standards Style Guide.*

{B7} American Telephone and Telegraph Company. *System V Interface Definition (SVID), Issues 2 and 3.* Morristown, NJ : UNIX Press, 1986, 1989.

{B8} /usr/group Standards Committee. *1984 /usr/group Standard.* Santa Clara, CA: UniForum, 1984.

{B9} X/Open Company, Ltd. *X/Open Portability Guide, Issue 3.* Englewood Cliffs, NJ : Prentice-Hall, 1989.

Annex C
(inform ative)

Standards Infrastructure Description

Responsibility: Wendy Rauch

HLJ : Once again, a full replacement for this Annex, so no further diff marks. I D
would point out a general editorial issue here: ISO standards and technical D
reports do not allow references to commercial or academic organizations, so a bit of D
pruning will be necessary in this Annex. I would also recommend removing any D
time-perishable information: number of members, dues, meeting schedules, tele- D
phone numbers, etc. And I renew my request for more knowledgeable readers to D
point out requirements for diacritical marks in some of the non-English names and D
addresses. Thanks. D

C.1 Introduction

This annex provides a brief summary of the major national and international organizations working on the standardization of information technology.

There are two major categories of open standards organizations. One consists of formally-recognized standards bodies, responsible for definition and dissemination of public standards. Their specifications are known as formal or de jure standards. International, national, and regional standards groups, and some professional and technical organizations' standards groups are examples of formal standards bodies. Organizations specifying standards for open system usually give precedence to international standards first, then regional, national, and finally professional group standards.

The other standards organization category consists of informal bodies. Informal standards bodies are typically created by suppliers or users of information technology, usually using a consensus method, to enable the implementation of standards. They produce specifications known as industry standards or de facto standards. Certain trade associations, industry groups, vendor consortia, and user groups are examples of informal standards bodies. For informal specifications to be approved as formal standards (e.g., international or national standards) informal standards groups typically submit their specifications to formal standards organizations.

The term ''de facto standard'' is sometimes applied to popular vendor-defined systems. Such systems, however, are closed systems, often controlled in a proprietary fashion. Although they have value, closed de facto standards are not the subject of this guide.

Most standards bodies support three types of status for their standards or specifications—approved, draft, and work item. An approved standard is one that has been fully ratified by whatever means the approving standards body uses. A draft standard is one that has yet to be fully ratified, such as an ISO DIS (Draft International Standard) or a CEN ENV. Work item is a catch-all phrase for everything else, such as immature specifications, technical reports, etc., that have not yet achieved draft status.

C.1.1 International Standards Bodies Overview

Standards with the highest status are internationally agreed ones. In information technology, these are produced and published by the International Organization for Standardization (ISO). Other standards and/or recommendations are issued by the International Electrotechnical Commission (IEC), the International Telecommunication Union (ITU), and the CCITT. International standards bodies participants are normally countries and trade bodies, rather than individual suppliers or users.

C.1.2 National Standards Bodies Overview

Like the international standards bodies, most national bodies do not admit either suppliers or users directly, but receive representatives from interested trade bodies. In general, the national bodies support and adopt the international standards, developing national standards only if no international standards are available, or to meet special national requirements. Each country has a national body that is the formal representative to the international standards groups.

The relationship between the major international and national standards groups is shown in Figure C-1.

C.1.3 International and National Standards Bodies Relationship

Nongovernment standards organizations include trade associations, professional and technical societies, vendor consortia, user groups, and other special interest groups. Actual standards development occurs within these groups. The standards specified by formal standards groups within this category typically are subsequently submitted to national or international standards organizations for approval. Many informal bodies submit their specifications to formal bodies for approval as an accredited standard. (See Figure C-2).

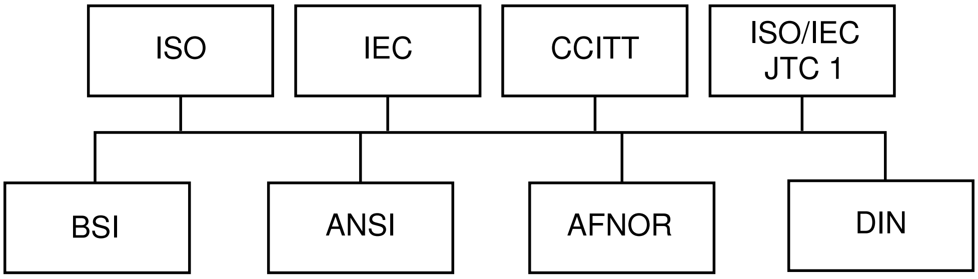

Figure C-1 − International and National Standards Bodies

C.2 The Formal Standards Groups

C.2.1 International and National Standards Organizations

AFNOR : Association Francaise de Normalization

AFNOR is the French national standards body. Its responsibilities include sourcing, coordinating, approving, and promoting standards, representing the French at international meetings, and controlling the use of the NF label—a trademark that shows compliance with a French national standard. AFNOR publishes three types of standards documents— AFNOR -approved standards that are mandatory for use in the public sector, experimental standards that use new processes or techniques and whose use is voluntary, and information or guide standards.

For further information, contact Association Francaise de Normalization (AFNOR), Tour Europe − Cedex 7, 92080 Paris La Defense, Telephone: (1) 42 91 55 55, Telex: AFNOR 611 974F, Fax: (1) 42 91 56 56.

ANSI : American National Standards Institute

ANSI is the national standards coordinating and approval body for the United States. A voluntary organization founded in 1918, the ANSI performs three major types of functions.

First, the ANSI approves standards and accredits standards development groups and certification programs. ANSI does not itself develop standards. Instead, it approves voluntarily-submitted specifications that were developed by technical and professional societies, trade associations, and special interest groups, if these specifications and/or groups meet ANSI criteria for due process and consensus.

ANSI accredits three types of organizations. One is professional societies, such as the IEEE. The second is committees formed for the exclusive purpose of developing standards, such as X3. The third is accredited by ANSI to use the canvass method to develop standards. Such organizations prepare a standard using their

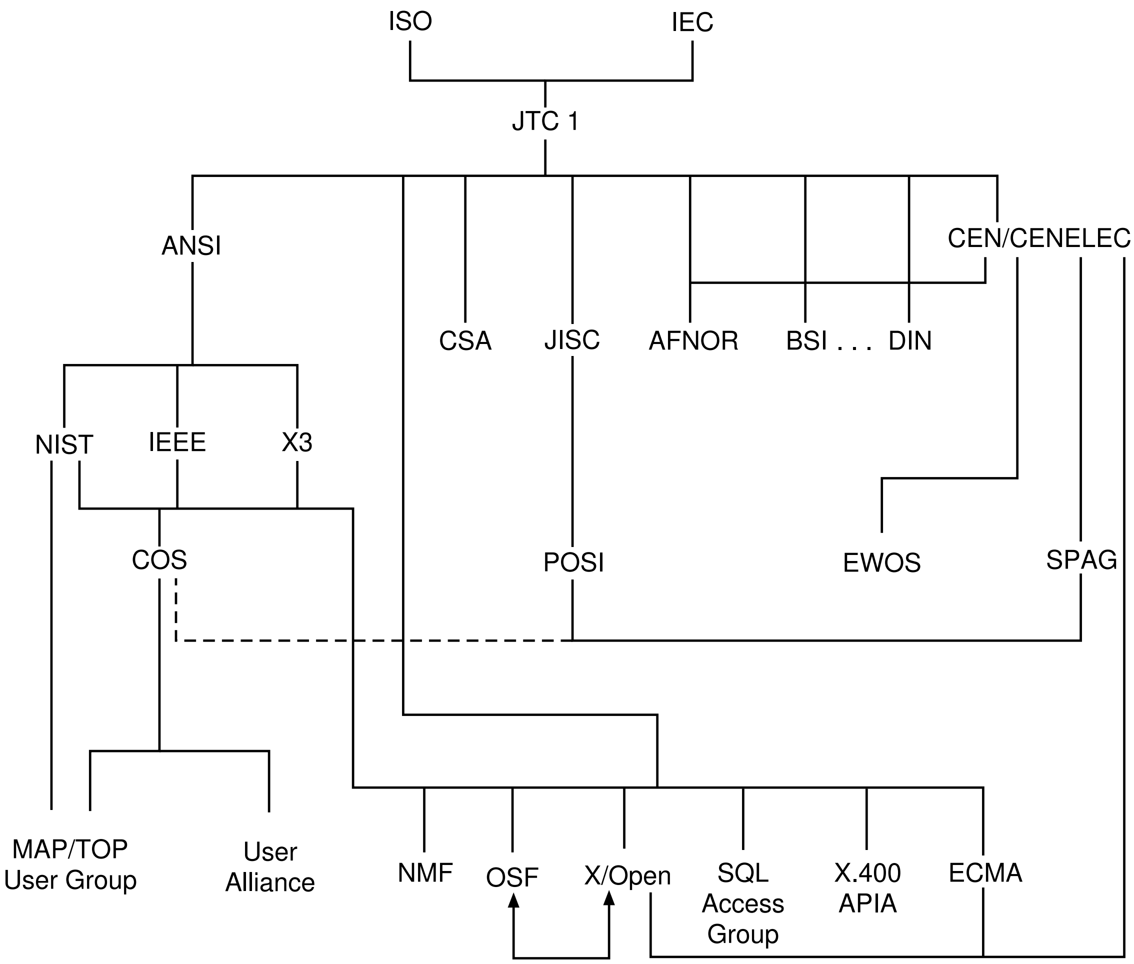

Figure C-2 – Selected Major Standards and Standards-Influencing Bodies

internal procedures. Then they submit that standard to balloting by other organizations representing a variety of interests. Last, they reconcile comments and objections returned. The NIST is an organization accredited to use the canvass process for standards development.

ANSI's second major function is to represent and coordinate US interests in international, nontreaty, and nongovernmental standards bodies. ANSI's third function is to be a clearinghouse for national, international, and foreign national standards. ANSI membership is open to manufacturers, organizations, users, and communications carriers. At present, more than 220 professional and technical societies and trade associations that develop standards in the US are ANSI members, as are 1000 companies.

For further information, contact American National Standards Institute (ANSI), 1430 Broadway, New York, NY 10018, (212) 354-3300, Telex: 42 42 96 ANSI UI.

BSI : British Standards Institute

BSI is the British national standards body and is responsible for promulgation of national standards. The BSI determines the overall UK view toward international standards and conveys that back to the secretariat of the international committee.

For further information, contact British Standards Institute, 2 Park Street, London W1A2BS, United Kingdom, Telephone: 44 1 629 90 00, Fax: 44 1 629 05 06.

Canadian Standards Association (CSA)

The Canadian Standards Association (CSA), in conjunction with regulatory agencies and with the provincial and national governments of Canada, provides a single source for consensus-based standards development, conformance testing, and standards-based regulations creation. The CSA has no single counterpart in the US. Instead, the CSA handles selected functions from US testing organizations, the FCC, and ANSI.

Membership in the CSA is open to any Canadian citizen, business, or organization. Members of the CSA's technical committees developing standards are volunteers, drawn from consumers, manufacturers, government, labor, and consultants. Membership is based on expertise in the field, and not, as in the US, mainly on having a vested commercial interest. The CSA has over 900 committees handling various aspects of standards in areas such as the environment, electrical and electronics, communications and information processing, construction, energy, transportation and distribution, materials technology, and production management.

CSA programs support Canadian industry and Canadian consumers where safety and quality of merchandise sold or made in Canada are concerned. To assure product quality and safety, the CSA offers fee-based testing services. In performing such services, the CSA assumes that most manufacturers have the facilities to test their products before submitting them to the CSA for certification and approval. If they do not, the CSA provides this service. CSA certification involves the submission of the product or service by the supplier, the verification of that product or capability by the CSA, and then continued follow-up audits by the CSA to ensure that the quality of the product or service is maintained.

For further information, contact (Address and phone number TBD).

CCITT : Comite Consultatif International de Telegraphie et Telephonie

An international organization, the CCITT is part of the International Telecommunications Union, which is a United Nations treaty organization formed in 1865. It is now a specialized agency of the United Nations.

The CCITT's primary mission is to develop standards supporting the international interconnection and interoperability of telecommunications networks at interfaces with end-user systems, carriers, information and enhanced-service providers, and customer premises equipment. Every four years, the CCITT publishes the results of its work as ‘‘Recommendations.’’ Its recommendations are law where communications in Europe are nationalized.

Membership and participation in the CCITT are open to private companies; scientific and trade associations; and postal, telephone, and telegraph administrations. CCITT's principal participants are telecommunications administrations and carriers. Scientific and industrial organizations can participate as observers. The US representative is the Department of State.

For further information, contact International Consultative Committee on Telegraphy and Telephone, Central Administration Office, CH-1211, 2 rue de Varembé, Geneva, Switzerland,

CEN/CENELEC/CEPT

The Comite Europeen de Normalisation (CEN), Comite Europeen de Normalisation Electrotechnique (CENELEC), and the European Committee for Post and Telecommunications Administration are European regional standards committees responsible for developing and publishing European standards. CEN is an association of EC (European Community) and EFTA (European Free Trade Association) members. It is active in making members' standards into ISO standards and European standards. CENELEC is the counterpart of CEN that deals exclusively with electrotechnical matters. CEPT is the CEN counterpart that deals with telecommunications matters.

CEN, CENELEC, and CEPT can be considered the European regional equivalent of ISO for two reasons. First, they have as members the national standards bodies of their eighteen EC and EFTA member states. Second, standards adopted by these organizations must be implemented in full as national standards, regardless of the way in which the member voted, and regardless of any standards that conflict with them must be withdrawn. CEN members, for example, agree to use its published standards in preference to national standards, wherever possible.

CEN, CENELEC, and CEPT were created to improve the competitiveness of European enterprise by removing technical barriers to trade and facilitating the free movement of goods within Europe. To accomplish its aims, CEN, CENELEC, and CEPT perform the following tasks:

— Create and promote European Standards (EN).

— Rapidly create prestandards (ENV) in technology areas in which there is a high level of innovation or where it is felt that future standardization requires basic guidance. ENVs are subjected to an experimental period of up to three years.

— Create harmonization documents (HD) that are more flexible than European Standards so that the technical, historical, or legal circumstances pertaining to each country can be taken into account.

— Set up a framework for European certification that supports the issuing of a European mark of conformity to certain standards and the mutual recognition of test results and inspections.

— Promote the application within Europe of ISO standards and accelerate their production.

— Work in liaison with European professional federations and numerous technical organizations to establish priority standards programs and contribute to the technical work.

For further information, contact the European Committee for Standardization (CEN), European Committee for Post and Telecommunications Administration, 2 rue Brederode, Buite 5, B-1000 Brussels, Belgium, Telephone: +322 519 6860, Telex: 26257 CENLEC.

DIN: Deutsches Institut fur Normung

DIN is the German national standards body. Its functions include those performed by the US's ANSI (e.g., developing national standards and representing Germany in international and European standards bodies such as ISO, the IEC, CEN, and CENELEC), in addition to test and certification functions that are not handled by US consensus standards organizations. Since a key DIN objective is eliminating technical barriers to free trade, DIN plays an active role in the international standards arena to ensure that German products can be used and accepted internationally.

DIN standards are not mandatory within Germany. DIN claims that it relies on the technical excellence of its standards to win converts. Further incentive for accepting DIN standards is provided because DIN standards serve as the basis for regulatory technical law in Germany. Also, without the DIN testing and inspection mark, no insurance carrier in Germany will write insurance for a product.

DIN members include groups within Germany representing manufacturers, the academic community, user groups, user organizations (e.g., consumer advocate groups), the government, and trade unions. Many DIN staff are supported by organizations or companies, rather than by DIN. DIN presently has over 20 000 standards.

For further information, contact Deutsches Institut fur Normung, Burggrafenstrasse 6, Postfach 1107, D-1000 Berlin 30, Telephone: 49 30 26 01-1, Fax: 49 30 260 12 31.

IEC: International Electrotechnical Commission

The International Electrotechnical Committee is the equivalent of ISO, but for electrotechnical standards. ISO and the IEC have converged many of their information technology efforts to form JTC 1.

For further information, contact International Electrotechnical Commission (IEC), 3, rue de Varembé, CH-1211 Geneva 20, Switzerland, Telephone: 41 22 34 01 50, Fax: 41 22 33 38 43.

ISO : International Organization for Standardization

ISO was established in its present form in 1947 with the aim of reaching international agreement on standards. A voluntary, non-United Nations treaty, ISO's membership consists of delegations from standards bodies in participating nations. ISO solicits comments from other groups as well, including ECMA, the IEEE, the NIST, and the CCITT. ISO has a close relationship with the CCITT, which is, perhaps, the most influential of all the observer groups within ISO.

ISO is responsible for the development and standardization of the Open Systems Interconnection (OSI) model. It also considers items for standardization that were developed in other standards bodies, such as ANSI. At present, for example, it is considering the core POSIX standard (P1003.1).

For further information, contact the International Organization for Standardization, Central Secretariat, 1, rue de Varembé, CH-1211, Geneva, Switzerland-40.

JISC : Japanese Industrial Standards Committee

The Japanese Industrial Standards Committee (JISC) is the national standards body of Japan. The JISC represents Japan at ISO and IEC, develops Japanese standards, and monitors and liases with the standards-developing activities of other national organizations, especially those of the US. The goal of the JISC is to ensure that Japanese industry can compete internationally in the information technology and telecommunications industries.

The JISC has no true counterpart in other nations since the JISC has a special relationship with the Japanese government and major manufacturers. For example, the JISC's secretariat is the Agency of Industrial Science and Technology, a division of the Ministry of International Trade and Industry (MITI), which plays a central role in Japanese industry. The influence of this centralized national planning structure eliminates many areas of contention, including among companies with multinational branches, and facilitates the ability for Japanese standards groups to gain a consensus.

Major Japanese manufacturers help plan and develop standards. Foreign companies' involvement in the JISC is limited because of geographic and linguistic differences and because of restrictions on their meaningful participation. Although large-scale manufacturers may participate, user groups and small manufacturers find participation very difficult.

For information, contact Japanese Industrial Standards Committee, c/o Standards Department, Agency of Industrial Science and Technology, Ministry of International Trade and Industry, 1-3-1 Kasumigaseki, Chiyoda-ku, Telephone: 813 501 92 95/6, Fax: 81 3 580 14 18.

JTC 1: Joint Technical Committee 1

The JTC 1, established in 1987, is the first joint committee of the ISO TC97 (Information Processing Systems) and its subcommittees, with the IEC Technical Committee 83 (Information Technology Equipment) and the subcommittee IEC SC47B (Microprocessor systems). The joint committee was formed to eliminate much of the two groups' standardization-activities' overlap and prevent the creation of incompatible standards for the same device or technology area.

Although ISO and IEC are equal partners in the management of JTC 1, most of JTC 1's standards work grew out of ISO's information processing work. In fact, JTC 1 has become one of the most important information technology standards organizations today because so many of the major ISO information technology standards being developed today are actually being produced by JTC 1 groups.

The JTC 1's purpose is to develop international standards in the areas of information technology systems (including microprocessor systems) and equipment. Microprocessor systems include, but are not limited to, microprocessor assemblies, and related hardware and software for controlling the flow of signals at the terminals of microprocessor assemblies.

The JTC 1 initially organized its standards work into four major groupings, each of which contains subcommittees that, in turn contain working groups. The four main groupings and their subcommittees are:

JTC 1 Application Elements Group

- SC 1: Vocabulary
- SC 7: Software Engineering
- SC 14: Representation of Data Elements
- SC 22: Languages

JTC 1 Equipment and Media Group

- SC 11: Flexible Magnetic Media for Digital Data Interchange
- SC 15: Labeling and File Structure
- SC 17: Identification and Credit Cards
- SC 23: Optical Disk Cartridges for Information Interchange
- SC 28: Office Equipment

JTC 1 Systems Group

- SC 6: Telecommunications and Information Exchange Between Systems
- SC 13: Interconnection of Equipment
- SC 18: Text and Office Systems
- SC 21: Information Retrieval, Transfer, and Management for OSI

JTC 1 Systems Support Group

- SC 2: Character Sets and Information Coding
- SC 24: Computer Graphics
- SC 25: Interconnection of Information Technology Equipment (formerly IEC TC 83)

SC26: Microprocessor Systems (formerly IEC TC47B)

SC27: Security Techniques (grew out of JTC 1 SC20: Data Cryptographic Techniques)

POSIX standardization work is being done within SC22's Working Group 15 (SC22/WG15). A JTC 1 Special Working Group on Strategic Planning is performing a technical study on Application Portability (AP). This study's goal is to identify the standards that need to be written or revised to support application portability between hardware and software environments.

The JTC 1 is not involved in application-specific information technology areas, such as banking and industrial automation systems, nor is it concerned with microprocessor subsystems covered by the scopes of IEC TC22 on power electronics or TC86 on fiber optics.

The JTC 1 has liaison relationships with numerous ISO and IEC Technical Committees, as well as with the CCITT.

Like ISO, membership in JTC 1 consists of delegations from standards organizations in member countries. At present, 23 countries participate in JTC 1, and there are another 11 observer countries. The ANSI holds the secretariat for JTC 1.

For further information, contact: American National Standards Institute (ANSI), 1430 Broadway, New York, NY 10018, (212) 354-3300, Telex: 42 42 96 ANSI UI, or International Organization for Standardization (ISO), Central Secretariat, 1, rue de Varembé, CH-1211, Geneva, Switzerland-40.

SGFS (Special Group on Functional Standardization)

The Special Group on Functional Standardization (SGFS) is an ISO group, under JTC 1, which is responsible for the international standardization process of profiles or functional standards.

C.2.2 Nongovernment Formal Standards Organizations

ECMA: European Computer Manufacturers Association

Established in 1961 to develop data processing standards, ECMA is a trade organization, open to any computer firm developing, manufacturing, or selling in Europe. The ECMA has about 20 members, and approximately 13 active Technical Committees.

ECMA contributes to the ISO standards development efforts, in addition to issuing its own standards. ECMA is particularly active in the development of higher layer protocols for OSI networking. It also is developing a standard for a Portable Common Tool Environment (PCTE).

For further information, contact European Computer Manufacturers Association, 114 rue du Rhone, CH-1204 Geneva, Switzerland, Telephone: 41-22-735-36-34, Telex: 41 3237, Fax: 41 22 786 53 31.

EIA : Electronic Industries Association

The EIA is a US trade organization, whose membership consists primarily of manufacturers. The EIA has been a standards developer in the areas of electrical and electronic products and components since 1926. Many of its standards have been submitted to ANSI and approved as ANSI standards. The EIA is best known for the RS-232-C standard.

For further information, contact John Kinn, Vice President – Engineering, Electronic Industries Association (EIA), 2001 I Street NW, Washington, DC 20036, (202) 467-4961.

IEEE : Institute of Electrical and Electronic Engineers

The IEEE is a professional scientific, engineering, and educational society that develops and publishes standards and specifications in a variety of computer and engineering areas. The standards and specifications published are of three types: true standards, recommended practices, and guides.

''Standards'' are specifications with mandatory requirements. Recommended practices are specifications of procedures and positions preferred by the IEEE. Guides are specifications that suggest alternative approaches to good practice, but make no clear-cut recommendations. The IEEE is accredited by ANSI, and can, therefore, submit its standards directly to the ANSI board of Standards Review. All new and revised IEEE standards are submitted to ANSI for review and adoption as ANSI standards.

The IEEE Standards Board authorizes, coordinates, and approves all standards projects, and coordinates cooperation with other standards organizations. Standards are proposed and sponsored by technical committees of the IEEE Societies, standards committees, or Standards Coordinating Committees (SCC), depending on the scope of the work. Either these committees or standards subcommittees manage the actual standards development and balloting. The individual draft standards are specified in working groups inside the subcommittees—one working group per standard (see Figure C-3).

HLJ : This is the figure from previous drafts. Wendy's input to me duplicated the C-2 figure, which seemed less correct.

IEEE membership is open to any dues-paying individuals. Standards participants are individuals, not companies or organizations. IEEE membership is required for voting, but not for participating in the development of draft standards.

Approximately 30 000 members are active in standards development. More than 500 IEEE standards exist, and more than 800 standards projects are underway. The IEEE also administers the secretariat or cosecretariat of 17 American National Standards committees.

The most well known IEEE standards are the IEEE 802.3 CSMA/CD and 802.4 token bus LANS, IEEE-488 bus, the National Electrical Safety Code, and the P1003.n POSIX standards. The 802.3 and 802.4 standards are also approved ISO standards. The core POSIX standard (POSIX.1 {2}) has been approved by ISO, and

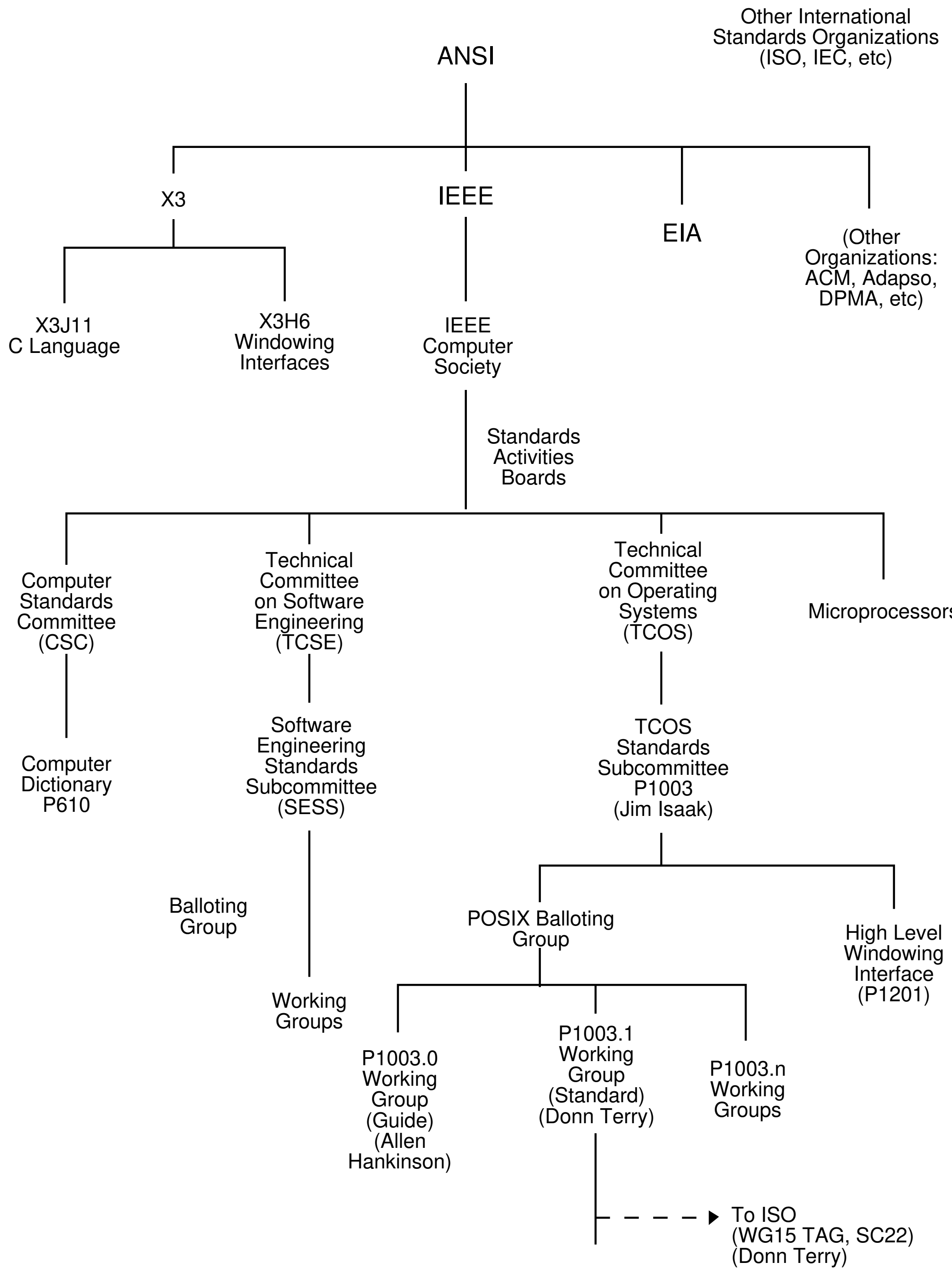

Figure C-3 – IEEE Standards Diagram

is now an ISO, as well as an IEEE, standard. The POSIX.0 specifications, with which this document is concerned, will be, in IEEE parlance, a ‘‘Guide’’ to a POSIX Open Systems Environment.

For further information, contact the Institute of Electrical and Electronics Engineers, Inc., 345 East 47th Street, New York, NY 10017, USA.

NIST : National Institute of Standards and Technology

The National Institute of Standards and Technology (formerly the National Bureau of Standards) was established by an act of the US Congress on March 3, 1901 to advance, and facilitate the application of, US science and technology for public benefit. Toward this end, the Institute for Computer Sciences and Technology (ICST) within the NIST, conducts research and provides technical advisory services to help Federal agencies acquire and apply computer technology.

The NIST is a major driving force behind standards development. Through the Institute for Computer Sciences and Technology, the NIST develops and publishes Federal Information Processing Standards (FIPS) for the United States. Federal agencies to use in their computer equipment procurements. Federal agencies are obligated to use these standards, where applicable.

Federal computer standards also are widely used by the private sector, and often are adopted as ANSI standards. Besides defining standards, the NIST has defined an Application Portability Profile (APP), which comprises a series of nonmandatory specifications and a guide for US government users to use in developing a portable, interoperable architecture and environment.

The development and evolution of both FIPS and the APP is carried out in conjunction with users and vendors through an ongoing series of NIST-conducted Implementor Workshops and User Workshops (e.g., OSI implementors workshops, APP workshops, and Integrated Software Engineering Environment workshops). The workshops provide forums for user and vendor feedback and comments on evolving NIST standards, and help ensure that there is a general commitment among vendors to building products that conform to the evolving NIST specifications.

Additionally, the NIST develops test methods and performance measures to help users and vendors implement standards and to test the conformance of vendor implementations to FIPS specifications. Among others, the NIST has test suites for most FIPS programming languages, FIPS Database SQL, and POSIX.1 {2}. The POSIX.1 {2} conformance test suite, however, is based on the conformance-test assertions developed in the POSIX Test and Methods working group (P1003.3.1).

Besides developing its own standards, NIST staff members participate in a number of other standards activities and organizations, including the ANSI X3 Committee on Information Processing Systems, ISO/IEC JTC 1, CCITT, ECMA, and the IEEE.

For further information, contact the National Institute of Standards and Technology, Gaithersburg, MD 20899, Telephone: (301) 975-2000. The cognizant person for P1003.0 information is Allen Hankinson at (301) 975-3290.

T1

T1, established in 1984, is an ANSI-accredited standards body that is developing standards and technical reports. The standards and reports are intended to support interconnection and interoperability of telecommunications networks at interfaces with end-user systems, carriers, information and enhanced-service providers, and customer premises equipment.

Six T1 technical subcommittees are currently developing these standards and reports under the T1 Advisory Group. The subcommittees also recommend positions on matters under consideration by other North American and international standards bodies.

T1 Membership and full participation is available to all interested parties. For further information, contact Alvin Lai, Exchange Carriers Standards Association, c/o T1 Secretariat, 5430 Grosvenor Lane, Suite 200, Bethesda, Maryland 20814-2122, or call (301) 654-4505.

X3

X3, established in 1961, is an ANSI-accredited standards body that develops computer, information processing, and office systems standards. X3 also participates in the development of international standards in these areas. In addition, it serves as a Technical Advisory Group (TAG) to ANSI for most of the subcommittees working on international standardization projects within JTC 1. The Computer and Business Equipment Manufacturers Association (CBEMA) functions as X3's secretariat.

X3 membership is open to all organizations, upon payment of a service fee. The current membership includes computer manufacturers, communications carriers, user groups, and government agencies. More than 3200 volunteers from these organizations participate in the X3 standards work. They are organized into about 85 technical groups, working on 700 projects.

Three standing committees report to X3: the Standards Planning and Requirements Committee (SPARC), the Strategic Planning Committee (SPC), and the Secretariat Management Committee (SMC). The following are the major X3 technical committees:

Recognition

X3A1	Optical Character Recognition

Media

X3B5	Digital Magnetic Tape
X3B6	Instrumentation Tape
X3B7	Magnetic Disks
X3B8	Flexible Disk Cartridges
X3B9	Paper/Forms Layout

- X3B10 Credit/Identification Cards
- X3B11 Optical Digital Data Disks

Data Management and Graphics

- X3H2 Database
- X3H3 Computer Graphics
- X3H3.6 Windowing Interfaces
- X3H4 Information Resource & Dictionary

Languages

- X3J1 PL/1
- X3J2 Basic
- X3J3 Fortran
- X3J4 COBOL
- X3J7 APT
- X3J9 Pascal
- X3J10 APL
- X3J11 C
- X3J12 Dibol
- X3J13 Common Lisp
- X3J14 Forth
- X3J15 Databus

Documentation

- X3K1 Computer Documentation
- X3K5 Vocabulary

Data Representation

- X3L2 Codes and Character Sets
- X3L5 Labels and file Structure
- X3L8 Data Representation

Communication

- X3S3 Data Communications

Systems Technology

- X3T1 Data Encryption
- X3T2 Data Interchange

X3T5 Open Systems Interconnection

X3T9 I/O Interface

Text

X3V1 Office and Publishing Systems

For more information, contact CBEMA, c/o X3 Secretariat, 311 First Street NW, Suite 500, Washington, DC 20001-2178, Telephone: (212) 626-5740.

C.3 The Informal Standards Organizations

The following organizations are some of the major trade associations, user groups, and professional bodies active in either promoting, implementing, or reviewing information technology standards.

BCS : British Computer Society

The BCS is a professional institution that participates in standards work, organizing specialist groups on specific subjects for input to BSI.

For further information, contact (information TBD).

CBEMA : Computer and Business Equipment Manufacturers Association

CBEMA is a trade organization whose primary function is to represent large manufacturers of hardware-based information technologies equipment in lobbying about public policy. In addition, it provides education programs, information exchange forums, and deals with the industry's public image.

CBEMA has long had an interest in standards. It serves as the secretariat for X3. It also offers a standards and technology program where its members can exchange information on standards issues and industry standards.

CBEMA's members are mostly large manufacturers because its dues are tied to corporate revenues and structured in a way that makes it too expensive for small companies to join. Members are either American companies or US subsidiaries of non-American companies.

For more information, contact CBEMA, 311 First Street, NW, Suite 500, Washington, DC 20001-2178, Telephone: (202) 626-5740.

CODASYL : The Conference on Data Systems Languages

The Conference on Data Systems Language (CODASYL) has been active since 1960 in the development of the COBOL language, through its COBOL Committee (CC). Since 1969, it also has been active in the development of a common Data Description Language for defining schemas and subschemas, and in a data manipulation language, through the DBTG Data Base Task Group of the CC. The activities of the CC are documented in the COBOL Journal of Development, which serves as the official COBOL language specification.