CIRCUIT CELLAR ONLINE

THE MAGAZINE FOR COMPUTER APPLICATIONS

Circuit Cellar Online offers articles illustrating creative solutions and unique applications through complete projects, practical tutorials, and useful design techniques.

RESOURCE LINKS

A Guide to online information about:

Abbreviations, Acronyms, and Standards

by Bob Paddock

The good thing about standards is that there are so many of them, every one can have one of their own. :-)

The bad thing about most of the standards listed here is that their sponsoring organization makes their living by selling copies of the standard that you want. :-(Maybe some day, all information shall be free...

Why might you be interested in a resource page on standards? What happens if tomorrow out of the blue you get a phone call and it goes like this:

"Hello? I just saw your web page and I think you can handle this Ball Grid Array project for me. We want to contract you to build 5000 pieces a week for the next two years. We estimate each board will cost us $1000. Can you build our boards to IP610 specifications under ISO9001 using Mil-Handbook-235? We can only do business with you if you can interface to our EDI system that follows The Secretariat for Federal EDI standard. By the way is your MRP software compliant with Mil-Handbook-347?"

While the prospect of 520k units makes you think that you can pay off that new $250,000 Flying Prob Material Defects Analyzer much sooner than you thought, you have no idea what they are talking about as far as some of these standards are concerned. But now you are going to find out about them real fast....

Standards can frequently throw you an oddball acronym or term that leaves you scratching your head wondering exactly what they are referring to. Fortunately, there are several online resources where you can look up your newly encountered term.

The Free On-Line Dictionary Of Computing is the easiest place to start. Simply type in your word and most of the time it will return the definition that you seek.

Next I turn to Appendix A, Abbreviations and Acronyms of Federal Standard 1037C, Telecommunications: Glossary of Telecommunication Terms.

A helpful list of acronyms used in electronic packaging can be found in the Electronic Packaging Industry Acronym List.

If I strike out there, I give the Guides to Organization Acronyms and Abbreviations via the Union of International Associations (UIA) a shot.

Others to try are: Glossary of Time and Frequency Terms, Internet Definition of Terms, Glossary, and Acronyms.

What follows is an alphabetical list of standards organizations:

Asynchronous Transfer Mode

More on DoD's Asynchronous Transfer Mode (ATM) implementation can be found at this link.

http://www.ansi.org

The American National Standards Institute (ANSI) has served in its capacity as administrator and coordinator of the United States private-sector voluntary standardization system for 80 years. Founded in 1918 by five engineering societies and three government agencies, the Institute remains a private, nonprofit membership organization. ANSI facilitates voluntary consensus standards and conformity assessment systems, and promotes their integrity.

ANSI does not itself develop American National Standards (ANSs); rather it facilitates development by establishing consensus among qualified groups.

ANSI also supplies ISO Standards from the International Organization for Standardization.

Area Codes see North American Numbering Plan (NANP)

Bellcore see Telcordia Technologies.

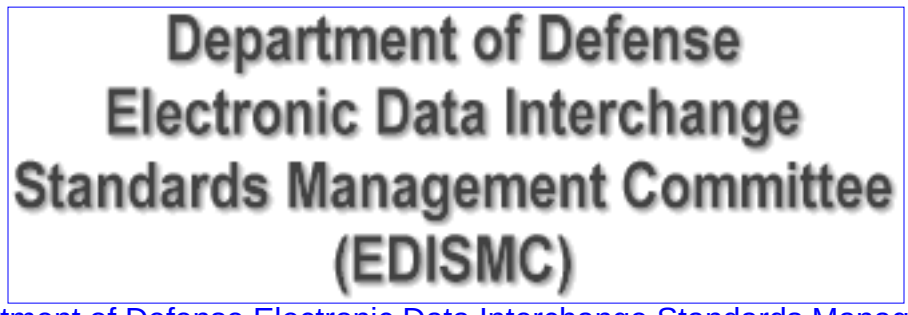
http://www.corba.org

What Is CORBA?

The Common Object Request Broker Architecture (CORBA), is the Object Management Group's answer to the need for interoperability among the rapidly proliferating number of hardware and software products available today. Simply stated, CORBA allows applications to communicate with one another no matter where they are located or who has designed them.

http://www-datadmn.itsi.disa.mil

Defense Information Systems Agency provides a repository for the centralized management of the DOD data standards and related information.



Department of Defense Electronic Data Interchange Standards Management Committee

Retrieve DoD Implementation Conventions for Electronic Data Interchange. If you plan on working as a military contractor and you want to get paid, you need to be familiar with the information here.

EDISMC maintains to links to several other EDI related organizations:

Central Contractor Registration
Electronic Commerce Acquisition Program Management Office (ECAPMO)
Defense Transportation EDI Committee (DTEDI)
Defense Logistics Management Standards Office (DLMSO)
Medicare EDI
Federal Acquisition Virtual Library
Data Interchange Standards Association (X12)
Health Level Seven (HL7)
Medical Informatics Standards
Electronic Messaging Association (EMA)
CommerceNet
North American Trade Procedures Organization

DOD Joint Technical Architecture (JTA)

The Joint Technical Architecture (JTA) is a document that mandates the minimum set of standards and guidelines for the acquisition of all DoD systems that produce, use, or exchange information. The JTA is used by anyone involved in the management, development, or acquisition of new or improved systems within DoD.

Recent discussions within DoD have defined three types of architectures: operational, technical, and system. A technical architecture is a set of rules, or "building codes," that are used when a system engineer begins to design/specify a system. These rules consist primarily of a common set of standards/protocols to be used for sending and receiving information (information transfer standards such as the Internet Protocol suite), for understanding the information (information content and format standards such as data elements or image interpretation standards), and for processing that information. It also includes a common human-computer interface and "rules" for protecting the information (i.e., information system security standards).

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www.dodssp.daps.mil

The Department of Defense Single Stock Point was created to centralize the control, distribution, and access to the extensive collection of military specifications, standards, and related standardization documents either prepared by or adopted by the DoD.

DISA JIEO

CENTER FOR INFORMATION TECHNOLOGY STANDARDS

DISA JIEO Center for information Technology Standards

GLOBAL ENGINEERING DOCUMENTS
An IHS GROUP Company

http://global.ihs.com

Lest one think that reading through standard catalogs is a boring task, you can find some amusing titles such as the standard for Doughtnut Machine, Cutting and Frying aboard Naval vessels. It also leads one to wonder, is there anything that doesn't have a standard?

On a more serious note, Global Engineering Documents covers a diverse range of fields across the entire globe. If you are unsure of what area your standard may be listed under, this is a good place to start looking.

For example Telecommunications Industry Association (TIA) standards can be obtained from Global Engineering Documents.

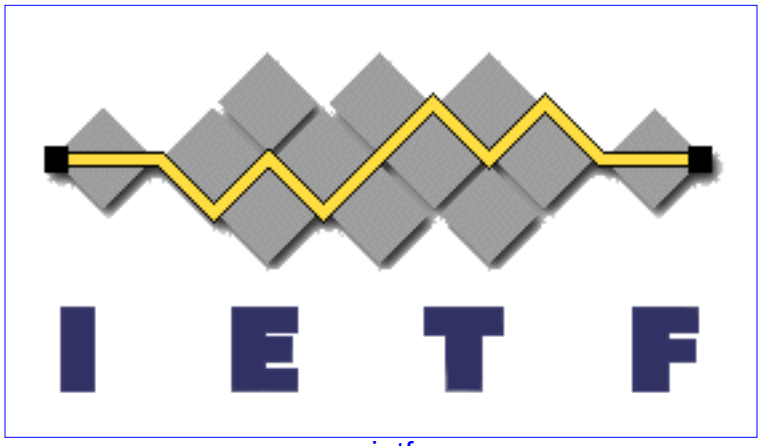
IEEE

Search the IEEE Standards Catalog.

ieee standards products/services

IEEE Standards Products/Services

- IEEE Standards Bearer, 1995 to present
- Emerging Practices in Technology papers
- Errata sheets for published standards
- Interpretations of published standards



www.ietf.org

The Internet Engineering Task Force (IETF) is a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. It is open to any interested individual.

First-time attendees might find it helpful to read The Tao of the IETF.

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www.ipc.org

IPC technical program activities provide you with the information you need on:

Standards to facilitate communication between suppliers and customers, guidelines with current industry positions on a wide range of subjects, research to solve industry problems, correlation of industry test methods, and new developments in interconnection technology.

They have answers to such questions as, "Do we need to by capacitors with crimped leads to keep the meniscus out of the holes?"

The IPC also keeps a watch on the Legislative and Regulatory Affairs that are of interest to the electronic industry; for example, the Printed Circuit Investment Act (HR1122/S635):

This bill will reduce the depreciation period for pwb and assembly equipment to three years. Download a sample letter (MS Word document) that you can fax, mail, or e-mail to your senators and representatives.

Their weekly Regulatory and Legislative Information/Alerts are worth watching as well.

Industry Acronym List: Wondering what all those TLAs (Three-Letter Acronyms) are? Here's a helpful list of acronyms used in electronic packaging.

Intelligent Network

www.bellcore.com/orgs/nic/index.html

The National ISDN (Integrated Services Digital Network) Council (NIC) has been formed to support the development of ISDN services that require network connectivity, compatibility and integrity on a nationwide basis, and for which uniformity of operation is necessary from the customer's viewpoint to render the service usable on an efficient basis ("National ISDN").

More on ISDN can be found here.

www.iso.ch

The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies from some 130 countries, one from each country.

The mission of ISO is to promote the development of standardization and related activities in the world with a view to facilitating the international exchange of goods and services.

A common misconception is that the letters I-S-O are a acronym of International Standard Organization, when in fact, "ISO" is the short form of the organization's proper name, derived from the Greek *isos*, meaning "equal", which is the root of the prefix "iso-" that occurs in a host of terms, such as "isometric" (of equal measure or dimensions) and "isonomy" (equality of laws, or of people before the law). ISO, as a proper name, was chosen to prevent problems with translations of acronyms into different languages.

Most of us have run into a manager or organization touting "ISO 9000" as the solution to all product quality problems, and "ISO 14000" as the solution all environmental, "green," problems. In ISO's own words they want to put an end to company statements that imply that ISO 9000 signifies product quality or that ISO 14000 means that a product is "green." See their How to avoid false ISO 9000 and ISO 14000 claims leaflet if you would like to know more.

ISO 9000 and ISO 14000 are what are known as “generic management system standards.” "Generic" means that the standards' requirements can be applied to any organization, regardless of the product it makes (or whether the “product” is actually a service activity). "Management system” refers to what the organization does to manage its processes.

If your "management system" says that you can make life-jackets out of cement, and all of your work instructions have been properly audited and signed per the ISO 9000 guidelines, then your product is ready to ship, even though it would kill anyone foolish enough to use such a product. The next time you hear someone tout "ISO 9000" as a quality system, find out what they *really* mean.

ISO 9001 - 1994 Quality systems model for quality assurance in design/development, production, installation and servicing.

ISO 9002 - 1994 Quality model for quality assurance in production and installation.

ISO 9003 - 1994 Quality systems model for quality assurance in final inspection and test.

Area Codes

The North American Numbering Plan (NANP) was invented in 1947 by AT&T and Bell Laboratories. It conforms to the International Telecommunications Union Recommendation E.164 (the international standard for numbering plans).

The NANP is the numbering plan for the Public Switched Telephone Network in the United States and its territories, Canada, Bermuda, and many Caribbean nations, including Anguilla, Antigua and Barbuda, Bahamas, Barbados, British Virgin Islands, Cayman Islands, Dominica, Dominican Republic, Grenada, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago, and Turks and Caicos.

NANP numbers are ten digits in length, and they are in the format:

NXX-NXX-XXXX

Where N is any digit 2–9 and X is any digit 0–9. The first three digits are called the numbering plan area (NPA) code, often called simply the area code. The second three digits are called the central office code or prefix. The final four digits are called the line number.

A comprehensive description of the NANP is included in BOC Notes on the LEC Networks -1994, which can be obtained from Telcordia Technologies.

National Electric Safety Code Updates

This list of files includes changes to the 1997 National Electric Safety Code (NESC).

While the National Security Agency is not normally a place one thinks of to find standards, it has been speculated that it has been involved in some of them. Particularly those involving cryptology and cryptologic history.

It is also a excellent source for the Freedom of Information Act Handbook, which you might need when seeking out some military standards.

You may find the book The Puzzle Palace: A Report on America's Most Secret Agency by James Bamford a interesting read.

The National Technical Information Service is developing a repository of military/federal specifications and standards and industry-standards documents to make it easier for U.S. firms to quickly obtain the standards you need.

National Computer Security Center (NCSC)

Rainbow Series Library covers such items as DoD Password Management Guideline, 12 April 1985. (Green Book), Technical Report, Computer Viruses: Prevention, Detection, and Treatment, 12 March 1990, and other security documents that you may need to familiarize yourself with if you want to sell computers or computer services to the government.

If you have any need of encryption equipment or encryption information, this is a good place to start.

The Trusted Product Evaluation Program (TPEP) is the program by which the NCSC evaluates computer systems against security criteria. The TPEP performs computer security evaluations for, and on behalf of, the NCSC.

Office of Information Technology

Did you know there was a government standard for government webmasters?

GSA Office of Information Technology—Virtual Library. Inside the Virtual Library, you will find references to organizations and documents which comprise library source references to the field of information technology.

The OMG charter includes the establishment of industry guidelines and detailed object management specifications to provide a common framework for application development. Conformance to these specifications will make it possible to develop a heterogeneous computing environment across all major hardware platforms and operating systems.

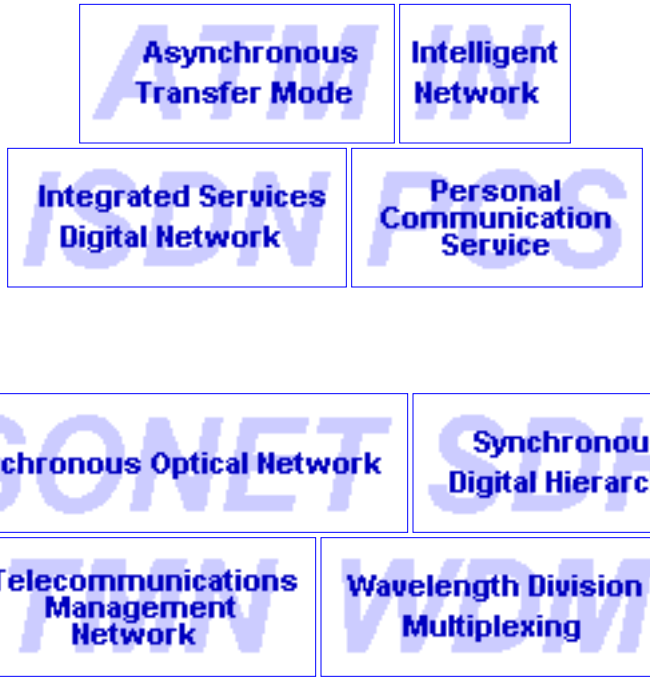
Personal Communication Service

www.sae.org

What do cars, aircraft, trucks, off-highway equipment, engines, materials, manufacturing, and fuels have in common? SAE. The Society of Automotive Engineers is your one-stop resource for technical information and expertise used in designing, building, maintaining, and operating self-propelled vehicles for use on land or sea, in air or space.

www-library.itsi.disa.mil

The Standards Document Library of the U.S. Military is the starting point if you are looking for a military specification, military handbook, or a military standard. They also have a excellent list of links to the commercial sectors standard bodies. If you can't find the standard body that you are looking for, this is a good place to start.



This link will take you to any of the above, there are several more here as well.

The couple of links that follow are just two of the many interesting titles that you can find in Standard Document Library. Unfortunately not all documents are yet available in electronic format.

MIL-HDBK-235 Electromagnetic (Radiated) Environment Considerations for Design and Procurement of Electrical and Electronic Equipment, Subsystems 18 Dec 86

MIL-HDBK-347 Mission-Critical Computer Resources Software Support

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http://164.214.2.59/sandi/index.html

The purpose of the Standards and Interoperability web site is to provide a reliable network of standards-related information for use by NIMA, its contractors, and the Imagery and Geospatial Community (IGC) as a whole. The goal is to present all the necessary information needed to promote interoperability among all United States Imagery and Geospatial Information Service (USIGS) systems.

The Secretariat for Federal EDI

Contains the format and establishes the data contents of various transaction sets for use within the context of an Electronic Data Interchange (EDI) environment. The transaction set can be used to provide for customary and

established business and industry practice relative to the billing for goods and services provided.

If you plan on doing business with the government and you want to get paid, then you will need to be familiar with the information here.

Synchronous Optical Network

Telecommunications Management Network

www.bellcore.com/resources/standards/index.html

Telcordia helps coordinate the participation of industry stakeholder groups and manages standards-oriented projects. Our experts are dedicated to designing the seamless interworking of the telecommunications networks of today into the information networks of tomorrow.

Telcordia provides technical analysis and consulting associated with issues that arise in public forums and in domestic and international standards bodies. Understanding those issues has a great impact on the ultimate success or failure of your business decisions.

More can be found at: telecom-info.bellcore.com/site-cgi/ido/index.html, www.bellcore.com/NIC/, www.bellcore.com/orgs/nic/index.html.

Time and Frequency Division of NIST

The Time and Frequency Division is an operating unit of the Physics Laboratory of the National Institute of Standards and Technology (NIST). Located in Boulder, Colorado, at the NIST Boulder Laboratories, the Time and Frequency Division:

- maintains the primary frequency standard for the United States.
- develops and operates standards of time and frequency.
- coordinates U.S. T&F standards with other world standards.
- provides time and frequency services for United States clientele.
- performs research in support of improved standards and services.

You can find FREE software at the T&F site that will set your clock over the Internet. So, the next time the boss tells you that you are late getting to his meeting, you'll know in your mind that he has finally been wrong about something. :-)

Glossary of Time and Frequency Terms

What is the real time?

Global Positioning System

What is GPS?

GPS is a satellite-based radionavigation system developed and operated by the U.S. Department of Defense (DoD). GPS permits land, sea, and airborne users to determine their three-dimensional position, velocity, and time 24 hours a day,

in all weather, anywhere in the world with a precision and accuracy far better than other radionavigation systems available today.

GPS Date Rollover Issues

On midnight 21/22 August 1999, the GPS week will rollover from week 1023 to week 0000. This could be interpreted as an invalid date. This rollover problem is a problem that occurs every 20 years.

A list of NANU abbreviations, Links to related sites.

Video Teleconferencing

More than you probably ever wanted to know about video teleconferencing standards...

Wavelength Division Multiplexing

XTP

The Xpress Transport Protocol

The Xpress Transport Protocol (XTP) is a transport layer protocol designed to provide a wide range of communication services built on the concept that orthogonal protocol mechanisms can be combined to produce appropriate paradigms within the same basic framework.

Rather than using a separate protocol for each type of communication, XTP's protocol options and control of the packet exchange patterns allow the application to create appropriate paradigms such as:

- reliable datagrams
- transactions
- unreliable streams
- reliable multicast connections
- error control, flow control, and rate control are each configured to the needs of the communication

A little more detail is given in this short Introduction to XTP.

For much more detail about XTP, retrieve the XTP 4.0 Specification (PostScript).

I've often thought of implementing XTP form in some embeded-control project but so far I haven't had the time.

Any trademark or logo used here is the property of their respective organization.

Let me know what standards I've missed. I know that there are thousands of them out there....

If you would like to add any information on this topic or request a specific topic to be covered, contact Bob Paddock.
