Micro Standards

ANSI's role in standards development

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Assuming many of my readers lead a life away from their computer as well as one in front of their computer, I believe you may have seen the name "ANSI" on various things. You may have seen it on lawnmowers or SCSI documents or in the newspaper. Have you asked yourself what ANSI means or stands for?

ANSI's coordinating role

ANSI is the American National Standards Institute, the US national coordinating institute for voluntary standards. Typically, you will see ANSI in a standard's name followed by some letters and numbers such as X3.181-1980. These characters represent the full name of the standard and the year it was published.

Does this mean that ANSI wrote the standard and published it? No.

ANSI itself does not write standards. ANSI develops the procedures that standards developing organizations, SDOs, use to develop standards. It also reviews the procedures and processes that the SDOs use, and in the end approves the standards that SDOs develop to become ANSI standards.

For many industries, it is very important to have the name of the standard include ANSI because ANSI is respected, is known throughout the world, and has an excellent track record of openness and fairness. All IEEE standards developed by the Computer Society and many other groups automatically seek ANSI approval after they become approved IEEE standards.

(Since I don't have room to explain all of ANSI as an organization and its processes here, those interested in more details should look for Carl Cargill's book, *Open Systems Standardization: A Business Approach* from Prentice-Hall/PTR, 1997.)

ANSI was organized in 1918 in response to a perceived crisis. The industrialization of the US was based upon the commonality of interchangeable parts over distance, and the use of "nonstandard" standards was becoming a major problem.

Today, ANSI standards cover every conceivable area, but I limit this discussion to the information technology-computer industry.

In addition to the responsibilities I've already listed, ANSI represents the US in the International Organization for Standardization/International Electrotechnical Commission's Joint Technical Committee 1 as the JTC1 TAG, Technical Advisory Group. In IEC, ANSI has a relationship with the USNC, the US National Committee.

Within ANSI, the committees involved with IT standardization are the

- *Executive Standards Council.* ExSC is responsible for the actual standards process. It manages the operating procedures, promotes timely completion of the standards activities, and generally acts as caretaker of the consensus process.
- *Board of Standards Review.* The BSR and its staff review the procedures—not the technical content—used to develop the proposed national standards. It is the responsibility of this committee to see if consensus procedures have been followed, if disagreements have been handled properly, and if consensus has, in fact, been reached. The members of the BSR serve as individuals rather than as representatives of a particular segment of ANSI.

Some familiar ANSI standards are SCSI, SQL, FDDI, Ethernet, Token Ring, Cobol, Fortran, and Flexible Disks. There are many others. Since the IEEE sends all of its standards to ANSI for approval, the end result of approval is an ANSI/IEEE standard. Therefore LAN standards

such as IEEE 802 will include ANSI/IEEE 802 in the name. With ANSI/IEEE standards, IEEE also forwards its standards to ISO, so eventually the title becomes ISO/IEC ANSI/IEEE 802.

The process

Developing a standard in the US is very simple. Someone or some company proposes an idea for a standard, an SDO backs the idea with a project authorization, the standard is developed, and finally it is approved. This sounds very simple, but in reality it is has many hurdles and trap doors, all of which slow down and divert the energy of the developing group. ANSI legitimizes the process to make it safe and convenient for developers to work via model procedures.

In the IT industry most standards are developed by a handful of committees such as NCITS (previously known as X3), EIA, TIA, and the IEEE.

These SDOs get an idea to develop a standard. They then use their ANSI-approved procedure to approve a project. In the IEEE that means operating with a PAR, Project Authorization Request. When the IEEE approves a PAR, it issues an ANSI PIN, Project Initialization Notification, to all SDOs so they can see what is happening for coordination and other purposes.

The working group that has the PAR then develops the standard in an open and fair manner following the IEEE Standards Board procedures. These procedures include discussion meetings and voting on proposed standards. They are based on ANSI model procedures and are reviewed by ANSI. Once the standard process is completed, the IEEE Standards Board approves it, and it becomes an IEEE standard. The IEEE automatically forwards it to ANSI for approval.

Impact

ANSI approval is limited to a review of the procedure used and does not delve into technical issues. Every step, from sponsor-level balloting through review by the IEEE Standards Board, is documented and presented to the ANSI's BSR for final approval. In addition, the action or inaction at every level is subject to appeal.

This may sound cumbersome and lengthy, but the process is designed to protect standards developers from restraint of trade and similar accusations.

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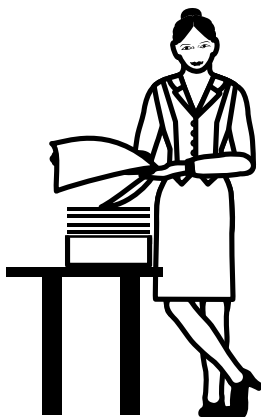
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