Compstan 86 to explore future standards directions

Robert M. Poston, Software Standards Editor

The dynamics of standards use is the focus of the 1986 Computer Standards Conference in San Francisco, California, from May 13 to 15. Buyers of computer products and builders (suppliers) of computer products that must conform to standards will come together with developers of standards to address some provocative issues.

What should be standardized in the computer industry? How should builders implement new standards, and how should they apply old ones? How should buyers select computer products? Let’s start thinking about these important questions now.

What to standardize. Right now, computer standards bodies such as the IEEE, EIA, and X3 will accept a project authorization request for the initiation of a new standard from anyone who can fill out the required paper work. Screening committees put in place by these organizations do eliminate absurd suggestions. Coordination with the American National Standards Institute reduces redundancies.

But, do we want subjects for standards to be introduced at random? Should there be an organized effort to set directions for selecting subjects to be standardized?

Implementing new standards. The Department of Defense has spent hundreds of millions of dollars to create and implement the Ada programming language for the benefits of a standardized language. The department mandated that Ada be used on military projects.

But, it is expensive to buy an Ada compiler (about $25,000) and to train programming teams to use Ada. To date, only about 20 percent of current military projects are implementing Ada. The other projects have found reasons for not using

Standards bulletin board

P1003: Operating systems

Draft four of the P1003 operating systems standard has been completed at the working group’s September meeting. The group substantially resolved the overlap with X3311, the C language group; most functions in the overlap will be referenced to the X3311 document, “C Information Bulletin,” available from CBEMA.

Furthermore, a number of definitions to be nailed down for the final user document were identified. However, the current definitions should not affect the trial user implementations, said working group chairperson Jim Isaak.

The balloting has just been completed, and submission to the IEEE Standards board is scheduled for March. Trial user status is expected by April. The working group’s next meeting will be January 13-15 in Denver, Colorado. For more information, contact Jim Isaak, Charles River Data Systems, 983 Concord St., Framingham, MA 01701; (617) 626-1000.

NBS seeks software firms for testing

The National Bureau of Standards has asked software producers to join the bureau’s Institute for Computer Sciences and Technology in designing, developing, and evaluating software test methods.

The areas include database management systems, data dictionary systems, computer graphics, programming languages, operating systems, and document interchange. The bureau will provide available documentation, prototype implementation, and use of its laboratory testbeds.

For information, contact Helen M. Wood, National Bureau of Standards, A255 Technology Bldg., Gaithersburg, MD 20899; (301) 921-3553.

Metric standards being reviewed and balloted

An IEEE standard for software reliability metrics is being reviewed and balloted. For more information, contact James Dobkins, IBM FSD, MS 105-913, 9500 Goodwin Dr., Manassas, VA 22110; (703) 367-3912.

Work is in progress on three other metrics standards projects listed with the IEEE. Individuals interested in participating are urged to contact the appropriate chairperson listed below.

- A standard for software quality metrics. Contact Norman F.

P1028: First draft of reviews and audits document available

The first formal draft of P1028, “A Standard for Software Reviews and Audits,” is now available, working group chairperson Charles Hollocker announced.

Copies are available for $7 from the IEEE Computer Society Press, Draft Standard Dept., 1730 Massachussets Ave. NW, Washington, DC 20036-1903. Hollocker can be contacted at AT&T, 901 Rolling Dr., Lisle, IL 60532; (312) 510-4469.
it. The Defense Department is using a forceful approach to implement a standardized language.

Another approach to standardize a language (and other things) is to let free enterprise run its course. Take, for example, Borland International, a commercial software company in Scotts Valley, California. Borland is selling a Turbo Pascal compiler for $69.95.

At last count, more than 100,000 copies of this Pascal compiler had been shipped to customers. With this number of users, Turbo Pascal becomes a de facto standard. (What would happen if the Department of Defense asked Borland to implement Ada?) In what other ways can new standards be implemented effectively?

Applying old standards. Gordon Bell, in his keynote address to Compon in 1984, outlined how the Japanese had taken an old standardized language (Fortran) and a de facto, standardized computer architecture (IBM 360) and optimized them to produce some of the world's fastest computers.

The Japanese didn't proliferate new languages; they didn't create new architectures. They simply used well-accepted conventions. Should our computer industry be following the Japanese example in standardizing what's available as opposed to developing new standards?

Buying computer products. Pity the poor buyer selecting a computer product today! The number of alternatives in most cases is staggering. In addition to the overwhelming number of products available, the functional, quality, and reliability characteristics of products are defined differently by different manufacturers (if they are provided at all). How can buyers compare computer products intelligently? Is a buyers' standardization effort called for?

At Comsstan 86, some of the leaders of the computer industry will be gathering to debate these and other questions about standardization. Even though Comsstan 86 is officially a conference, it will have a workshop orientation (hecklers will be planted) that should lead to some lively discussions.

The technical program committee has had a favorable response to its call for papers and has answered many telephone inquiries about the conference. A varied program and a good turnout is expected.

John Brown, Jr., at Burroughs Corp. is in charge of conference registrations. His telephone number is (619) 438-3000. Bob Poston is chairperson of the technical program committee. He may be contacted at (201) 918-0110. See you at Comsstan 86!

SESAA III discusses means for better standards

Leonard Tripp, Boeing Aerospace, and Martha Branstad, National Bureau of Standards

Bearing in mind the conference's "standards in a competitive world" theme, the 190 discussion group participants at the third Software Engineering Standards Applications Workshop made several recommendations about how standards should be created and implemented.

The SESAA III groups were divided into eight standards areas:

Third parties. Those discussing standards and third-party software issues said the guiding principle for third-party software interaction should be "Treat your supplier like a developer; treat your developer like a supplier."

The group's specific recommendations were to get industry and trade associations involved in standards efforts, to help regulatory agencies adopt IEEE standards, to promote effective communication between standards users through established terminology, to promote the transfer of standards technology to users, and to assess the issue of adapting or tailoring standards during their implementation.

Maintenance. Reflecting the growing interest in maintenance issues, the software maintenance standards group had significant discussion. Its set of recommendations were that a software maintenance guide be developed, that maintenance be taken into account by all working groups, that—despite the controversy over its use—the term "software maintenance" be kept, and that management issues be addressed in initial standards efforts.

Data collection. The data collection standards group identified what it saw as three key problems and offered recommendations for them. One problem seen is that there is no set of data descriptions, primitives, or general directions defining the information needed for existing standards efforts. The recommendation was that the SESAA generate guidelines defining the information needed to be gathered.

The second problem seen was the potential for inconsistency and redundancy among the many SESAA groups. The participants asked who should generate or control the guidance for data collection. They recommended a single set of guidelines be cooperatively created by the various existing measurement projects.

The third problem seen was how should the IEEE interact with the many data collection standards efforts undertaken by other groups. The discussants recommended that the SESAA review existing work and use whatever might be applicable.

Tools. In its discussion, the standards and tools group recommended that a tool-planning or tool-implication section be added to all SESAA standards and that a tool exchange environment be created. It also urged the development of a generic tool model to provide a framework for existing tool interfaces and the measurement of current products to get better data for tool development.

SESAA directions. The SESAA directions group urged that more formal interactions between IEEE and government activities be established to capitalize on what the group considered "excellent informal interaction." It also urged formal criteria be developed to charter new standards working groups. A third recommendation was the SESAA encourage stronger education programs.

Certification and legal. After far-ranging discussions, the group considering standards, certification, and legal issues decided three areas needed further exploration: the legal consequences of IEEE standards, the role of the IEEE in software certification, and the role of the IEEE in professional standards for software engineers.

Implementation. The standards implementation group concluded that there are three fundamental prerequisites to implementation: recognition of the need for standards and their benefits, selection or development, and management support for the effort.

Selection. The standards selection group recommended eight steps in software engineering standards selection: analysis and assessment of the proposed standard's environment, determination of the standard's requirements, clarification and resolution of standards issues, identification and acquisition of candidate standards, assessment of candidates against the selection criteria, actual selection, tailoring and enhancement, and approval and acceptance by the participants.

Proceedings. Those interested in the technical presentations at the October 1984 SESAA III workshop can find them reprinted in a proceedings book, order number 562, available from the IEEE Computer Society, PO Box 80452, World Way Postal Center, Los Angeles, CA 90089-0452. SESAA IV will be held at an unscheduled date in 1987 rather than this year as