NCC 78

A Record-Breaking Conference
Anaheim, June 5-8

The largest exhibit of computer hardware, software, systems, and services ever held will be at the 1978 National Computer Conference in Anaheim, California, June 5-8. The demand for booth space has been so great that a West Hall had been built at the Anaheim Convention Center to accommodate exhibitor overflow. A record-breaking 330 organizations have reserved 1,382 booths.

Conference chairman Stephen W. Miller views NCC 78 as "a picture of unparalleled breadth and diversity, encompassing the complete spectrum of information processing technology and applications."

A major theme of the conference is the role of computers in alleviating the national energy problem. Computers and energy will be discussed by Administration members at the opening plenary session and will be featured in major keynoting addresses by Theodore Williams, President of AFIPS, Harold J. Haynes, Chairman of the Board and Chief Executive Officer of the Standard Oil Company of California, Cuthbert C. Hurd, President of Solar Energy Research Associates, and Ryal R. Poppa, Chairman of the Board of Pertec Computer Corporation. A special symposium chaired by Hurd will focus on the ability of current computer technology to cope with the U.S. energy problem and to help forge a national energy policy and program serving the public interest.

NCC Highlights

Technical and Professional Program. This year emphasis will be on practical applications rather than theoretical concepts, according to program co-chairmen Leonard Y. Liu and Sakti P. Ghosh. Approximately 100 sessions are scheduled, covering the latest developments in such areas as:

—Applications (graphics, artificial intelligence, EFT, simulation)

—Methodology (performance measurement and evaluation, programming methodology, analyses of software techniques and tools, installation management)

—Systems (networks, DBP, architecture, VLSI)

—Computers and Society (computer education and careers, privacy, legislation, crime)

In addition, three sessions are planned on recent progress in Japan. Marking an NCC first, these sessions, developed with the cooperation of the Information Processing Society of Japan, will report on technology and applications ranging from advances in semiconductors and architecture to multiterminal banking systems.

Professional Development Series. This special educational feature, organized under the direction of Gopal Kapur, will consist of 15 tutorial seminars, each a full-day minicourse to be conducted at the nearby Inn of the Park Hotel.

The seminars will cover such topics as word processing, women and management, managerial skills, microcomputers, distributed processing, cryptographic protection, protection from computer crime, and database system project design. A hands-on microcomputer software/hardware workshop will be included. This last will be limited to attendance of 50, while the other seminars will be limited to approximately 100. The separate fee of $45 for each seminar includes complete course materials plus access to the four-day exhibit program and the Personal Computing Festival.

Personal Computing Festival. Hobbyists, consumers, students, and computer professionals are invited to participate in the Festival at the Disneyland Hotel complex June 6-8.

There will be a program of papers and presentations, with some 30 sessions covering such subjects as graphics, music systems, speech synthesis, computer games, personal computers for the physically handicapped, systems for small businesses, software design, microprogramming, optical scanning, floppy disk systems, seminars for club leaders, hardware and software standards, and many more. All papers are to be published in *Festival Digest 78*, available at NCC.

An exhibition of individually designed microprocessor applications will complete the Personal Computer Festival. Prizes will be awarded for the most innovative demonstrations of hardware and software systems and applications.

The Pioneer Day Program, Wednesday, June 7, will honor the project team that developed SWAC, the National Bureau of Standards Western Automatic Computer. When it was dedicated in 1950, SWAC was the fastest computer in existence, the first using standard CRTs as its memory devices, and the first parallel-stored program computer to become operational. From its dedication until its retirement in 1967, SWAC served the scientific community in a variety of areas involving numerical analysis. Some of the early problems were the search for Mersenne primes, Fourier synthesis of x-ray diffraction patterns of crystals, the solution of systems of linear equations, and problems in differential equations. Harry D. Huskey, who was then Associate Director of the NBS Institute for Numerical Analysis, will chair a special session on SWAC.

With a record-setting attendance of 40,000 expected at the conference, preregistration is advised. A special Housing Bureau has been established, with rooms reserved at more than 60 hotels and motels in the Anaheim area. Housing Bureau registration forms are available from AFIPS, 210 Summit Avenue, Montvale, NJ 07645; 201 391-9810. All requests must be processed on the official reg-

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current, accurate working documents. Methods for recursive and optional syntactic elements have also been developed. In addition to the syntax, semantics contain general comments which assist the reader in interpreting the syntax. Technical reports, which have even further explanatory material, have been prepared for publication.

The method of subsetting the language is being changed with the second revision. The former technique was one of proper subsetting of all the language. Difficulty was encountered as language of limited scope and application was added. The syntax has now been divided into an APT language which serves as a nucleus and ten modular features which can be added to the nucleus. The APT nucleus is a complete and fully operational system which should be adequate for many applications. Each modular feature contains language which, when added to the nucleus, permits the user to perform the functions of that modular feature. Any number of modular features may be present concurrently; some require the presence of others.

The initial purpose of X3J7 was to standardize APT into a single document. The development of the standard recognized that the numerous existing APT processors contained contradictory capabilities and meanings and attempted to resolve these in light of their commonality. Little new language was added. Today, the mission has changed. Computer-aided manufacturing and design have stretched the older versions of APT to their limits. X3J7 has been instructed to develop standard language, frequently new, in several areas where little APT language previously existed even though considerable experience had been gained from specialized systems. The committee is fortunate to have many members who are leaders, implementors, and creators in the field, who have agreed that it is important to develop good language now, rather than piece contradictory language together later. The second revision will show the status of every syntactic

Language	Document	Syntax	Semantics
Cobol	X323-1974	2-D graphic	verbal
Minimum Cobol	X3.65-1977(?)	2-D graphic	verbal
Fortran	X3.9-1978(?)	semi-verbal (3)	verbal
APT	X3.37-1977	modified BNF	verbal
Basic	X3.60-1978(?)	BNF	verbal (2)
MUMPS	X11.1-1977	2-D graphic	FSM + verbal
PL/I	X3.53-1976	BNF	semi-VDL (1)
Numeric Representations	X3.42-1975	BNF	not applicable

(?) In process.
(1) See Marcotty, M., and Sayward, F.G. The definition mechanism for standard PL/I. *IEEE Trans. Software Eng.* SE-3, 6 (Nov. 77), 416-450.
(2) Definitions exist in VDL and SEMANOL.
(3) A definition exists in a modified FSM form by Bob McClure, reference elusive.

element; i.e. if it is existing or new language. It will also identify existing language which has been included for historic compatibility reasons.

In conclusion, X3J7 believes that the method used to develop and document Standard APT goes a long way toward being a guide for standards. It specifies both syntax and semantics in such a manner as to be both unambiguously explicit and acceptable to the computing community. It documents both the formal description of the linguistic elements and a verbal, explanatory position which is supplemented by technical reports. The document is prepared from an integrated, computer-based system which uses a metalanguage of positive integers and which automatically handles database modifications through secondary ramifications. This system simplifies database changes, automatically generates cross-references between language elements, permits timely generation of corrected, current working papers, and provides the ability to extract easily the various subdivisions of the language.

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1. Lee, J.A.N. Considerations for future programming language standards activities. *Comm. ACM 20*, 11 (Nov. 1977), 788-794.

Author's Response

I am very pleased that X3J7 has added to the ". . . Programming Language Standards . . ." presentation. APT has taken a step toward the formal presentation of a definition of a language, though the semantics are still verbal, as is the case with Cobol. This example helps to point out the desperate need for a standard amongst standardizers. In particular, consider the above list of definitional schemes used in standards for preparing languages.

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istration forms. Headquarters hotels for ACM and IEEE-CS are the Disneyland Hotel and the Inn at the Park, respectively. To facilitate ease of transportation, shuttle bus service will be maintained between major hotels and the Anaheim Convention Center.

A red-carpet NCC Travel Service with complete information covering available air travel packages from various cities, as well as full explanation of regulations which apply to discount fares, can be contacted by calling the toll-free number 800 556-6882. NCC Travel Service personnel will be on hand at Los Angeles International Airport to provide assistance on arrival. In addition, a courtesy desk will be maintained at the Convention Center to aid in handling reservation changes or in arranging for tours of major attractions in Southern California.