

Listed are abstracts from recent papers by IBM authors. Inquiries should be directed to the publications cited.

Software engineering: The turning point, Anthony I. Wasserman (University of California, San Francisco), Laszlo A. Belady (RES Yorktown Hts., NY) et al., *Computer* 11, No. 9, 30-41 (September 1978). This is one of six articles in this issue of *Computer* covering topics explored at a workshop held in Portland, Oregon in March 1978 to analyze existing and future problems in computing. The articles in this issue are based on papers presented at the workshop plus the resulting discussions. This paper discusses software engineering and its major issues, which are identified as defining software components, learning from existing systems and tools, and transferring technology particularly between academic and industrial organization. The paper also covers research directions in software engineering and provides an extensive bibliography.

Successful network management hinges on control, Howard L. Giles (DPD Des Moines, IA) *Data Communications* 7, No. 8, 33-41 (August 1978). Critical on-line information systems require new levels of control and management that extend beyond the network itself. Communication Systems Management involves control of the distribution of information within the entire system that includes the network, computing resources, and people responsible. By defining user expectations, establishing service levels, and continuously monitoring the system, problem determination and correction can be facilitated. This paper discusses new perspectives of network management that help support systems control.

Optimization of mixed-media communication networks, Kiyoshi Maruyama (RES Yorktown Hts., NY), *Computer Networks* 2, No. 3, 168-178 (July 1978). Much network design effort has been concentrated in solving "subproblems" such as capacity of assignment, flow assignment, or topology of networks. However, different types of users, applications, and response time requirements, etc., require different classes of communications. This paper describes an algorithm for the problem of designing a store-and-forward packet-switched computer communications network with multiple classes of communication packets, using both terrestrial and satellite links. A good bibliography is provided.

A controlled experiment in program testing and code walkthrough inspections, Glenford J. Myers (Systems Research Institute, New York, NY), *Communications of the ACM* 21, No. 9, 760-768 (September 1978). This paper describes an experiment in program testing, using seven methods to test a small PL/I program. Both computer-based and noncomputer-based testing methods were used. The various methods were compared and their effectiveness discussed in the paper.

The NCP atlas: roadmap to IBM's net control, Albert J. Hedeem, (DPD Raleigh, NC) *Data Communications* 7, No. 12, 51-70 (December 1978). This paper, part of a series, presents a tutorial on the Network Control Program (NCP) of SNA. The article discusses NCP concepts, features, and functions, diagnostic facilities, and the advanced communications function in NCP. A dictionary of terms commonly used with SNA and NCP is provided.

VTAM means software for more logical network management, Sam D. Scott (SCD Raleigh, NC), *Data Communications* 8, No. 1, 77-90 (January 1979). The second part of a series, this paper presents a thorough tutorial on VTAM (Virtual Telecommunications Access Method), the implementation of SNA within host computers. The article discusses the interface of VTAM to the application and to NCP. VTAM services, data flow, and implementation considerations are other subtopics in this article.

Abstracts

How to access a network via IBM's TCAM, Larry Esau (SCD Research Triangle Park, NC), *Data Communications* 8, No. 2, 89-106 (February 1979). The telecommunications access method (TCAM) is IBM's primary queued access method for data communications. This article, part of a series on IBM telecommunication programs, describes the TCAM environment and discusses its components. A description of the data flow through TCAM is included. The article concludes with a description of the relation of TCAM to SNA.