TECHNICAL INFORMATION SERVICE
Senior Technical Staff Bulletin

STS 1-27
28 February 1967

CONTENTS THIS ISSUE

CUC

THE INDUSTRY, GENERAL

* 1967 GUIDELINES TO GOVERNMENT CONTRACTS. Electronic
News, Section Two, February 6, 1967. 72 p.

This special section of Electronic News contains an extensive
directory of major procurment personnel for NASA, DOD, Air
Force, Army, and Navy as well as descriptions of procurement
activities of the agencies. It includes the Washington area
offices and major installations, centers, and regional offices
located throughout the country. (The information for the
1967 Guidelines to Government Contracts was compiled from
various Government Directories such as the DOD Telephone
Directory)

TIS has several copies available for on demand dissemination.

ELECTRONIC NEWS. For those offices which don't subscribe
to Electronic News, it is a weekly newspaper covering the
government, military, aerospace, industrial, commercial and
consumer electronic markets. It includes listings of major
contracts awarded by Government agencies and prime contractors.

The subscription price is $3.00 per year. Order from:
Electronic News, Fairchild Publications, 7 East 12th Street,
New York, N. Y. 10003.

U. S. INDUSTRIAL OUTLOOK 1967. Industry specialists in
the Business and Defense Services Administration, U. S.
Department of Commerce, prepare this annual volume which
includes industrial developments in 1966 and projections for
1967. Included are analyses 78 individual industries or
industry groups. The volume may be purchased from:
Superintendent of Documents, U. S. Government Printing
Office, Washington, D. C. 20402. $1.25 each.

> " The production of computing machines is expected to
> reach an all-time high of $2.7 billion in 1967, a
> 7.9 percent increase over the value of shipments in
> 1966. Imports are also expected to hit a record
> high of $119 million, 21.4 percent over 1966, while
> exports, totaling $408 million, are expected to remain
> about the same."

THE INDUSTRY, GENERAL (cont'd)

SHARE SUBSCRIPTION PRIVILEGES FOR SSD's AND
PROCEEDINGS. SHARE is offering additional copies of
SSDs (SHARE Secretary Distributions) and Proceedings
on an annual subscription basis to organizations that are
SHARE members. Computer Usage Company is a SHARE
member. Offices may place subscriptions through the CUC
membership. The subscription cost is $40.00 per year for
SSDs and $20.00 for the Proceedings of Meetings. A copy
of the SHARE SSD subscription order blank is being sent
to each manager with this TIS Bulletin.

The monthly distributions from the SHARE Secretary consist
of material which is considered to be of interest to all
SHARE members, including official announcements by SHARE
officers, reports of Divisions and Projects, copies of
correspondence between members, and requests for informa-
tion.

TIS will continue to abstract pertinent SSD items in the
Senior Technical Staff Bulletin, and provide copies of the
material to offices not ordering the annual subscription.

DIGITAL COMPUTER NEWSLETTER, published quarterly by
the office of Naval Research, Mathematical Science Division,
is a medium of exchange of information between government
laboratories, academic institutions and industry. The infor-
mation contained in the Newsletter is selected by the editors
as being representative of the state-of-art. It is distributed
free to requestors. Representative items from the current
issue, October 1966, (distributed January 1967):

Computer and Data Processors-

University of Illinois, Illiac IV, Urbana,
Illinois.

THE INDUSTRY, GENERAL

DIGITAL COMPUTER NEWSLETTER (cont'd)

Computing Centers

State of California Department of Public Works, Remote Computer Network, Sacramento, California

Cleveland Board of Education, Data Processing Center, Cleveland, Ohio.

Headquarters, Navy Pacific Missile Range, Navy Computer Systems, Point Mugu, California 93041

State University of New York at Buffalo, IBM 360/67, Buffalo, New York 14214.

Triangle Universities Computation Center, Research Triangle, North Carolina.

Miscellaneous

University of California, Computer Aided Instruction, Santa Barbara, California.

Cornell University, Remote Computer Demonstration, Ithaca, New York 14850.

Los Angeles Public Library, Public Library Computer System, Los Angeles, California 90017.

New York State Department of Motor Vehicles, Records Automation, Albany, New York.

Ohio State University, New Graduate Program in Information Sciences, Columbus, Ohio 43210.

Parsons College, Shared Central Accounting System, Fairfield, Iowa.

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THE INDUSTRY, GENERAL

DIGITAL COMPUTER NEWSLETTER (cont'd)

Recommended for office Libraries and individual subscriptions.
Send request to be put on mailing list to:

> Gordon D. Goldstein, editor
> Digital Computer Newsletter
> Information Systems Board
> Office of Naval Research
> Washington, D. C. 20360.

(Note: Digital Computer Newsletter was previously distributed by the ACM as a supplement to their Journal and Communications. It is now available only by direct distribution from ONR as indicated above.)

IBM INFORMATION SOURCES

IBM PROGRAMMING ANNOUNCEMENTS. The Technical Information Service distributes IBM Programming Announcements (P Letters) to all CUDC office managers and principal analysts. We mail copies of the material as soon as it is received from our IBM resource. The first announcements, for 1967 included new information on the following topics. It was mailed to the offices 27 January.

> OS/360 Customized Distribution--new procedure.

> System/360 Disk Operating System (DOS/360).

> 1401/1460 Timing Program for BPS/360 Sort/Merge Programs.

> OS/360: PL/I F Level (44K) Compiler.
> FORTRAN IV G (128K)
> FORTRAN IV H (200K)

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IBM INFORMATION SOURCES

IBM PROGRAMMING ANNOUNCEMENTS. (cont'd)

System/360 Model 44 Programming System--
revised minimum system requirement.

1401/1460 Timing Program for DOS/360 and
TOS/360 Tape Sort/Merge Program

System/360 Tape Overlap Emulator for Model 30
with 1401/1440/1460 Compatibility Feature.

Shared Hospital Accounting System (SHAS)

DOS/360 BTAM...Communications Service-
ability capabilities added.

BPS/360 Input/Output 1412/1419.

To keep current with IBM Programming developments, it's
recommended that you learn where the P Letters are kept
in your office and check them frequently for material of
interest to you. We will not list all releases in the
TIS Bulletin. All of the 1966 and 1967 P Letters are
available for reference in TIS. We will be glad to research
specific queries for you.

IBM INSTALLATION NEWSLETTER. The Installation Newsletter
is prepared by the IBM Data Processing Division Headquarters,
White Plains. It is distributed only to IBM locations. Every
IBM salesman and systems engineer should receive a copy.
The Newsletter is separated into two parts. The first part
contains information which is For IBM Internal Use Only
and the pages are so labeled. The second part (on green
paper) contains information which may be reproduced by the
IBM Branch Offices at their discretion and given to customers.

Ask your IBM sales representative to give you copies of this
section of the Newsletters, if you aren't already receiving them.

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IBM INFORMATION SOURCES

IBM INSTALLATION NEWSLETTER (cont'd)

TIS recently sent copies of the December 16, 1966 issue of the IBM Installation Newsletter to each office manager and principal analyst, to illustrate the types of information released in the Newsletter. We will not distribute the material on a regular basis as your IBM Sales Representative should be able to supply it for you. (Note- New York Office : the Installation Newsletter is available in your eighth floor . Library)

Several of the topics in the December 16 Letter, Issue No. 66-022 :

1. Release 6 of DOS/360 available.
    Information on temporary restrictions.

2. S/360-20 Tape RPG will be able
    to process multiple file volumes----.

3. S/360-20 RPG Common Errors. A
    list of 16 most common errors
    encountered in RPG programs.

The combined sources of the IBM P Letters, distributed by TIS, and the IBM Installation Newsletter should provide good coverage of current information from IBM. Contact TIS for further assistance and reference support relating to specific IBM developments.

IBM-WHAT IS AVAILABLE, WHERE TO FIND IT : Technical Literature on Data Processing Systems, Applications, and Programs (520-1306-1).

This is the guide book to where to find it all. Ask your IBM Branch Office for copies. The folder outlines the organization and the scope of IBM technical (DP marketing) publications- how material is announced/updated, what reference points to use in locating specific items.

SYSTEMS PROGRAMMING

*APL/360. The APL Terminal System: Instructions for Operation, by A. D. Falkoff and Kenneth E. Iverson, IBM, Thomas J. Watson Research Center. November 1966. Mimeo. 27 pages plus examples and notes.

"The APL system comprises a central computing facility and an indefinite number of typewriter-like terminals, 31 of which may be simultaneously linked to the computer via telephone lines. This introduction to the system consists of two parts. Part I describes how to establish or sever a connection between the central computer and a suitable terminal, and gives the definitions of message forms that can be used to control these operations and other broad system functions. Part II is an introduction to APL itself which describes the language and gives examples of its use on a terminal."

Analysts interested in learning the "Iverson notation" will find Part II of APL/360 particulary useful. See Iverson's # THE PROGRAMMING LANGUAGE, John Wiley, 1962, for the basic work on APL.

* DECISION TABLE PROCESSOR is the subject of a recent project report from John Hoskyns and Company, Ltd. Data Processing Consultants, London. (their report No. 1, December 1966) It describes the design and implementation of a processor for a complex financial application on a small S/360. The processor has the following characteristics

  1. Functions as an extension to the S/360 BOS Assembler.

  2. Handles an enhanced form of decision tables.

  3. Involves only small inefficiences in the object programs.

SYSTEMS PROGRAMMING

DECISION TABLE PROCESSOR (cont'd)

4. Permits the decision tables in a program to be arranged in a hierarchy, each table being regarded as a closed subrountine.

The report contains a discussion of the (1) design outline (2) decision table format, and (3) logical features.

* NEW DIRECTIONS IN SOFTWARE 1960-1966, by Ascher Opler. In Proceedings of the IEEE December, 1966 p. 1757-1763.

This is one of 32 state-of-the art papers in the special computer issue of the Proceedings. The various articles are grouped under the headings : Applications, Software and Use Techniques, Computers and Components.

Copies of the computer issue are available from : The Institute of Electrical and Electronics Engineers, Inc, 345 East 47th Street, New York, New York 10017

($4.00 to non-members, $2.00 to members) Previously announced in TIS Senior Technical Staff Bulletin 11-106, 31 October 1966.

* TRANSLATION OF ASSEMBLY LANGUAGE AND MACHINE LANGUAGE PROGRAMS : A Selected Bibliography.
Prepared by CUE and distributed at their seminars on Re-programming held in the spring of 1966. The seminars were conducted by Ascher Opler and Robert Silverstone. The bibliography includes published articles and publications from the industry.

APPLICATIONS

EDUCATION

MACHINE RECORDS CONFERENCE. Proceedings of the 11th Annual Conference, University of Tennessee, April 25-27, 1966. (Sponsored by IBM)

APPLICATIONS

MACHINE RECORDS CONFERENCE (cont'd)

The papers presented at this conference dealt with a wide range of computer applications in colleges and universities, and were, for the most part, presented by the university officials responsible for the systems operations. Topics included student records, physical plant accounting, library applications, etc. Computer Aided Space Inventory and Utilization Study (at Florida State University) describes the application of a program for producing tables to be used for projecting the University's future needs and requirements.

The Technical Information Service has a loan copy of this volume. IBM may still have copies available for distribution.

(IBM) CAMPUS COMPUTING NEWSLETTER: Notes on University and College Data Processing. As the title suggests, the Newsletter is for IBM educational customers. It covers IBM support for those customers as well as other news related to educational data processing.

The Campus Computing Newsletter is similar to the TIS Senior Staff Bulletin in content and presentation. The mimeographed monthly publication is free. Send your request to be added to the mailing list to:

> Larry Wu
> IBM Corporation
> 59 Maiden Lane
> New York, New York 10038

PRINTING-PUBLISHING

* AUTOMATIC TYPESETTING-COST DATA AND INTERPRETATION. Speech presented at American University Seminar on Printing and Publishing: Management of Automation, January 19, 1967, by Joseph H. Kuney, Director of Business Operations and Publications Research, American Chemical Society, Washington, D. C. 8 p.

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APPLICATIONS

PRINTING-PUBLISHING

AUTOMATIC TYPESETTING (cont'd)

The ACS has been working with the use of computer in type-setting since 1958. They have acquired enough experience that they can now interpret the cost data they have been developing. In many cases they can apply a direct cost comparison between past methods and computer application to the same task. An excellent paper.

ENGINEERING

* COMPUTER-AIDED DESIGN. Electronics magazine is publishing a continuing series of articles on the relationship of the computer and the circuit designer.

For those of you who have access to Electronics the articles to date have appeared in the following issues:

Part 1	September 19, 1966
Part 2	November 28, 1966
Part 3	December 12, 1966
Part 4	January 9, 1967
Part 5	January 23, 1967
Part 6	February 6, 1967

MEDICINE

* THE ROLE OF COMPUTERS IN MODERN MEDICINE is the topic of a computer symposium published in the June 13, 1966 issue of the Journal of the American Medical Association. Papers are included on three major areas of computer utitization in medicine today:

(1) information storage and retrieval (characterized in the JAMA editorial as having had the most impact on the medical profession); (2) medical diagnosis, or more properly, the preparation of statistically regualated differential diagnosis; and (3) specialized applications described by the investigators who developed the applications.

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APPLICATIONS

MEDICINE

THE ROLE OF COMPUTERS IN MODERN MEDICINE (cont'd)

TIS has copies of the complete JAMA issue available for on demand dissemination. It was distributed to attendees at the recent CUE briefing session on "Advances in Computer-Based Hospital and Medical Information Systems."

Other papers distributed and available from TIS:

* How to Automate a Hospital. Robert M. Smith. Management Services, July-August 1966. p. 48-53.

* Setting Goals for an Automated Information System. James T. Howell, M. D. Journal of the American Hospital Assoc., vol. 40, May 16, 1966. p. 75-76, 120-121.

TIME SHARING

* A TIME-SHARING BIBLIOGRAPHY. George R. Trimble, CUDC New York, Compiler. January 10, 1967. Mimeo. 32 p. (to be published in: Computing Reviews, May-June 1967.)

The bibliography includes all aspects of time-sharing: hardware, software, language, applications and economics. The references are grouped under the following headings: (1) General and Introductory. (2) Systems Structure and Design. (3) Real-Time. (5) Multiprogramming. (6) Evaluation and Simulation.

An announcement of the preparation of this bibliography was made in the TIS Senior Staff Bulletin STS 6-46, April 7, 1966. Copies have been sent to all who requested them at that time.

* TIME SHARING COMMAND STRUCTURE. SSD 156, C 4411. 12 September 1966, 8 p.

Proposal for a Time Sharing Command Structure was submitted to IBM for evaluation by the Command Language Committee of the SHARE TSS Project. The proposal was written by

TIME SHARING

TIME SHARING COMMAND STRUCTURE. (cont'd)

C. A. Irvine and A. A. Dolotta. The broad design spec-
ification for the Command Language is based on the phil-
osophy that it is highly desirable that sufficient support
facilities be provided so that the customer can replace or
provide inappropriate, inadequate or missing facilities him-
self. An attempt is made to attain this goal while mini-
mizing the changes required to the current formulations.
Naturally, some of the suggestions made in th proposal
imply a considerable departure from the current design/
implementation.

* COMMAND SYSTEM STRUCTURE-AN OVERVIEW. IBM
Yorktown Heights. SSD 158, C 4493. 10 November 1966. 7 p.

For background on the Command System structure, read this
IBM paper and the preceeding SHARE proposal. The IBM
paper too includes some philosophical points of view regarding
the design and development of a new Command Language. It
touches a few of the points raised by the SHARE committee.

* TIME-SHARED EXECUTIVE SYSTEM FOR THE IBM 1800
DATA ACQUISITION AND CONTROL SYSTEM: Preliminary
Report by the joint TSX Review Committee (COMMON, IBM,
SHARE). SSD 159, C 4544, 12 December 1966. 42 p. The
contents of the report deals with the functional aspects of the
system rather than performance characteristics. The major
areas of concern, as seen by the committee are: (1) the
trade-off between multiprogramming and core exchange methods,
(2) the distinction between process and non-process jobs, and
(3) the type of installation and/or application.

The report details and criticizes the 1800 TSX-System Generation,
System Director, Nonprocess Monitor Supervisor, Disk Utility
Program, Assembler Language, FORTRAN, Core Load Builder,
Subroutine Library, Simulator, Diagnostics, Languages.

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TELEPROCESSING

* **TELEPROCESSING SYSTEM DESIGN** is the subject of the most recent IBM Systems Journal (vol. 5, no. 3, 1966) distributed in late December.

Part I	Characteristic problems. W. P. Margopoulos and R. J. Williams
Part II	A method for approximating the optimal network. L. R. Esau and K. C. Williams
Part III	An analysis of a request-quequed buffer pool. J. P. Bricault and I. Delgalvis
Part IV	An analysis of auxiliary storage activity. P. H. Seaman, R. A. Lind, and T. L. Wilson
Part V	A technique for estimating channel interference. T. W. Gay, Jr.
Part VI	The role of digital simulation. P. H. Seaman

Copies of the IBM Systems Journal should have been sent to all CUDC offices by IBM. Contact TIS if it wasn't received in your office. Contact us too if you want extra or personal copies.

SUMMARY OF BELL SYSTEM DATA SETS. Compiled by George R. Trimble, New York, January 1967. 65 p.

With Data Communications becoming an integral part of data processing, it is important that those in the field be aware of the tecniques and devices available to facilitate the use of remote terminals with computers. Whenever data must be transmitted over long distances using telegraph or voice-grade phone lines, a Data Set must be used to translate the binary information handled by computers to the frequencies normally used to communicate over these lines.

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TELEPROCESSING

SUMMARY OF BELL SYSTEM DATA SETS (cont'd)

'Several Data sets are available from the Bell System to service various types of terminals, lines, and transmission speeds. The objective of this summary is to point out the major characteristics of these Data Sets that are of significance to the systems designer. The descriptions are abstracted from the Bell System Data Communications Technical Reference Manuals.

See your office manager for a copy of this report. One copy has been sent to each manager for distribution within his office.

COMPUTER USAGE PUBLICATIONS

* Articles published during 1965 and 1966 by CUC personnel and other publications relating to company activities are included in a bibliography available from TIS. The material is arranged in four sections :

        I. General Information (about the company)
        II. CUC Services
        III. Technical Publications (27 citations)
        IV. Computer Usage

TIS recently sent each office manager a copy of all of the items listed in the bibliography. They are incorporated in a red binder labeled " CUC Client Executive Report ".

TECHNICAL INFORMATION SERVICE

TO: Eleanor Crouse-TIS-Mount Kisco

FROM: _____ CUDC Office: _____ DATE_____

SUBJECT: Request for items announced in STS Bulletin 1-27

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THE INDUSTRY	2	* 1967 Guidelines to Government Contracts	
	8	* APL/360. Falkoff and Iverson	_____
SYSTEMS PROGRAMMING	8	# The Programming Language. Iverson	_____
	8	* Decision Table Processor	_____
	9	* New Directions in Software. Opler	_____
	9	* Translation of Assembly Language and Machine Language Programs	_____
APPLICATIONS	9	# Machine Records Conference	_____
	10	* Automatic Typesetting-Cost Data	_____
	11	* Computer Aided Design. Electronics	_____
	11	* Computers in Modern Medicine. JAMA	_____
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TIME SHARING	12	* TS Bibliography. Trimble	_____
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	13	* Command System Structure. IBM	_____
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TELE-PROCESSING	14	* Teleprocessing System Design. IBM Systems Journal	_____
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* Items are available for your retention on request from TIS.
# Items are available on loan from TIS.

CUC