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Memorandum M-2125

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DIGITAL COMPUTER LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE 39, MASSACHUSETTS

CLASSIFICATION CHANGED TO:
Auth: DD 254
By: R. R. Everett
Date: 2-1-60

SUBJECT: SUMMARY OF IBM - MIT COLLABORATION
April 1, 1953 to April 27, 1953 inclusive

To: J. W. Forrester, R. R. Everett, H. Fahnstock, C. R. Wieser,
N. H. Taylor, D. R. Brown, S. H. Dodd, P. Youtz

From: A. P. Kromer

Date: April 30, 1953

Abstract: This period represents the sixth month of the Subcontract between MIT and IBM. The original contract termination date was April 27, 1953. Through an amendment this has been extended to July 31, 1953 to permit purchase and delivery of additional test equipment by IBM. Engineering development work will, however, be financed through a prime contract between IBM and AFCRC in the future.

Engineering Visits

IBM people working on the project spent 128 man days at the Computer Laboratory in Cambridge during this period. This is in addition to their participation in two meetings at Hartford regarding input-output equipment and a general joint project engineering meeting also at Hartford. During the interval MIT personnel spent 56 man days at IBM's Poughkeepsie Laboratory.

The general joint project engineering meeting at Hartford was attended by 21 IBM and 17 MIT people.

Exchange of Publications

During the period we have forwarded to IBM: 58 M-Memos, 7 E-Notes, Project Whirlwind Summary Report for 4th Quarter 1952, and miscellaneous time schedules, drawings and standards sheets.

We have received from IBM the Preliminary Operator's Reference Manual, List of Commands for Executing Arithmetic Operations, Joint Input-Output Meeting Reports, Project High Biweekly Reports, and various reports on magnetic cores and drums.

General Comments

Discussion has continued regarding the design of the arithmetic element and the control for this portion of the machine. This work has resulted in decisions to:

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General Comments (Continued)

- a) Omit a check register from Whirlwind II for the present.
- b) Have special tie line for transfer of numbers between registers.
- c) Include two index registers for programming with provision to add two more if desired later.
- d) Have control orders specified by 7 bits which establish 8 basic classes of orders and provide for multiple variations in each of these classes.

Plans have been made to have an engineer from Jack Jacobs's group become resident at IBM Poughkeepsie during the continuation of the block diagram and block schematic work for this portion of the machine. IBM has been requested to furnish schedule dates for the completion of the engineering and construction of models of the arithmetic element.


The study of in-out terminal equipment is continuing, and three meetings were held, attended by representatives from both laboratories. Two of these were at Hartford and one at Cambridge. In addition to detail considerations, this group has outlined a program for the interval between now and July 1, 1953 to provide study of all aspects of the in-out problem. Starting in July, the groups will establish specifications for various pieces of equipment in order to permit detail engineering design to proceed and have construction of the models completed as required for operation during the latter half of 1954.

A two day visit was made to the IBM Poughkeepsie and Endicott engineering and manufacturing operations to survey their work in the field of magnetic drums, in connection with considerations being given to the use of this type of equipment for buffer storage in the machine.

Discussions with component manufacturers to obtain information regarding reliability of electronic parts has continued. Also, information has been obtained regarding field experience.

Mechanical design work for plug-in units is continuing at IBM. Representatives from MIT are maintaining contact with the developments in this field. Final designs cannot be prepared until a general plan for the physical organization and layout of the machine has been completed, and agreed to by the electronic development engineers. A joint study of this general layout was started and it is expected that it will be completed during the next month.

The number of IBM persons of staff level assigned to the project as of the end of the period is approximately 70.

Signed: 

Arthur P. Kromer

Approved: 

Norman H. Taylor

APK/mmt
CC: J. M. West

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