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Memorandum 6M-4289

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Division 6 - Lincoln Laboratory
Massachusetts Institute of Technology
Lexington 73, Massachusetts

SUBJECT: EPSCOM BIWEEKLY REPORT FOR 6 APRIL 1956

To: Distribution List

From: R. P. Mayer

Date: 9 April 1956

Approved: K. S. McVicar
K. E. McVicar

CLASSIFICATION CHANGED TO:
Auth: DR224
By: RRE
Date: 5-22-60

Abstract: EPSCOM manpower now stands at 35 people. Progress on all programs is satisfactory.

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Equipment Program Services Committee (EPSCOM)

Two new Western Electric programmers, Bill Hansell and John Tadler, have been added to EPSCOM. The EPSCOM manpower now stands at 23 BTL, Lincoln, and Rand people (permanent); 12 Western Electric people (subject to rotation); or a total of 35 people.

Specifications for programs requested by the assembly test committee are being prepared by Sam Thompson, Howard Rundquist, and members of the Assembly Test Committee. Several programmers are also studying the problems presented.

(R. P. Mayer)

We are struggling to align our computer operating and IBM card processing procedures with those of Group 67.

(S. L. Thompson)

EPSCOM Height Finding

Coding of the Height Finder Flight Test Program (8209) is completed. Card room processing is complete and computer checkout of the program will begin immediately.

(F. Sweeney and J. Maroney)

EPSCOM Tracking Program

Approximately 3/5 of the recoding of the single-track tracking program #8500 has been proof-read and sent to the card preparation room. The first portion has already been successfully compiled. The track-while-scan equations coding is being revised for full 15-bit accuracy, and the printout routine is being recoded for use with a standard printer plug-board.

Considerable effort has been spent on the existing tracking program #8002 in enabling it to process LRI data of the Bath word format. A synthetic data generating program known as "GSRD0100" was used for this purpose. It is now felt that 8002 will be able to process BATH data with little difficulty when said site becomes operational soon.

(Chris S. Sherrerd)

Work on the clock program has been completed and inserted for use in the general tracking program and the height-finding program.

The first part of the height-finding program has been completed.

(Nancy Mardirosian)

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EPSCOM Subroutines for Tracking

The program for generating the sine-cosine table to 2^{-15} accuracy has been completed and run on XD-1, and is now being modified for better accuracy in certain areas. This should be ready to run again the middle of the week.

(Margaret Tefft)

A square-root routine is being compiled, and its performance will be checked for accuracy.

(Marcia Tobin)

Three short programs are being prepared: A card comparison program; a tape duplication program; and a binary printout program.

(Jeanne E. Ouellette and Gertrude G. McNeil)

EPSCOM Geography Display

I am working on a setup and the transformation of this setup for the geography display. The octal card setup has specific punches in column 17 for a vector, city, gap filler, or long-range input site. The location and velocity coordinates for the vectors are contained in words one and two. The x,y coordinates and the alphabetic abbreviation for the sites are contained in words one and two. The program sets up these cards into a table for the display.

(Ann B. Tebbetts)

We have completed a program for dual precision arithmetic and hope to test it in the computer early next week. This routine will be used as a basis for the conversion of longitude and latitude in degrees to a rectangular coordinate system.

(Elaine Colleran and Paula Titiev)

EPSCOM Pattern Check

The printout routines of the radar pattern checking program were modified so as to present legible copy on a straight across board.

The option of punching cards instead of printing can now be initiated by simply making the printer "not ready."

The LR azimuth jitter percentage printout was modified so as to always print two significant figures with an appropriately placed decimal point.

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EPSCOM Pattern Check (Continued)

The percentage calculation was modified to include "duplicates" type of errors. The LRI test team has requested that "missing" type of errors should also be included.

Occasionally a data error analysis does not give sufficient information, so the option of recording all data plus data analysis on tape has been added. After accumulating an adequate sample the program can either print out the tape records or continue data analysis.

The program now prints out in binary all "LOG" drum work which have parity errors.

The present routine which decides which pattern values are "missing" from present sample of radar data is extremely complicated and slow. Marcia Tobin is rewriting this portion of the program. The re-write will include a new routine for "matching extras" type of errors.

GlemPaulsen has converted a portion of the program for the compiler. The conversion included additions of sub-routines which would call for other sub-routines in a particular order. Since Phil Bagley expects to have his program (which converts an assembly deck to a compiler deck) completed in two weeks, Glem will make our instruction cards reflect all known corrections and modifications.

(W. J. Marston)

A major portion of time has been spent in familiarizing myself with the detailed functions of the Pattern Checking program before attempting to rewrite it for the compiler. The completed program is in working order, but there are quite a few improvements which can be made. Thus far, I have revised the first part of the program and converted it from the assembly to the compiler. This consisted of approximately 300 instructions and required several periods of computer time. The function of this first portion of the program is to generate set displays which will separate the pattern from "missing" and "duplicated" returns.

(Glenn F. Paulsen, Jr.)

EPSCOM Quick Radar Check

A memo has been written describing the Quick Radar Check Program and at present Wayne Gramling and Helen Quirk are in the process of coding the program.

(Helen E. Quirk)

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EPSCOM Radar Orientation

Work has been started on the "Orientation" project. This program proposes to indicate the reasons for poor orientation and positioning of the radar sites within a subsector by evaluating the outputs of the tracking program with relation of one site to another and also with respect to true north. Current plans call for a "quick" data analysis with a display generated. This display pattern should indicate if a biased error or individual inconsistency in the x, y or R, θ values exists.

(M. Dolan)

The "FGD from the Sun" program which analyses radar returns from the sun to aid site antenna orientation is completed and is operating successfully. Runs will be made by Division 2 during the next biweekly period.

(A. Werlin)

EPSCOM Teletype

The teletype test message program has been developed to the stage of having completed the initial coding and flow charting. The coding sheets were sent to the Card Room for punching on 3 April. No definite completion date could be given for this.

The program consists of roughly 300 instructions in addition to the Card Input Editor, which requires about 1200 registers. Also, 1600 registers are required for data storage in core memory. Auxiliary memory drum fields 1 thru 9 are required at this time, which may later be expanded to utilize all twelve fields.

Compilation of the program should be accomplished soon after the instruction card listing is received.

(George C. Cox)

EPSCOM G/A Test Program

The basic program is now in the production stage and can be used for testing. Slight modifications have been requested by the test team and they are now being incorporated.

(Ralph Bernards and
James P. Wong)

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EPSCOM Maintenance Programs for D.C.

Conferences have been held with C. Watt and R. Paddock to determine which paths to use in approaching this maintenance problem. Our next step is to interview the test teams for more information.

(James P. Wong)

EPSCOM MTC Tape Checks

Test programs for the MTC magnetic tape units are being prepared. Test programs for other areas of MTC are under investigation.

(W. E. Holden)

EPSCOM Speech Recognition

Nagging difficulties with MTC and its camera have recently delayed work on the speech program. Recognition of up to four different words has been accomplished with an accuracy of about 75-80 per cent for a single speaker. A complete revision of the phoneme-recognizer has been written.

Bill Holden will spend part of his time on this work.

(R. P. Mayer)

Signed: _____

R. P. Mayer
R. P. Mayer

RPM:hpm

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