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TO: Professor J. C. R. Licklider
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FROM: John W. Brackett
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DATE: May 16, 1969

SUBJECT: Status of AED for Multics

As you know there has been an effort to convert the AED system to Multics in progress since September. Although adequate resources have not been supplied to the project at any time, considerable progress has been made and I estimate the job to be at least 60% complete. The status of the project as of May 8 is as follows:

1. A reliable bootstrap compiler which compiles AED programs on the 7094 into Multics assembly language, and the necessary Multics system run-time support, has been available since December 1.
2. About 75% of the AED library had been compiled and tested as of early February.
3. Approximately 30% of the Multics version of the AED compiler has been compiled on the 7094 with the bootstrap compiler, and the recompilation of the remainder is not regarded as a major problem.

From September through January Terry Colligan, a part-time student (about 20 hours per week), Charles Garman of the Multics group (about 50% of his time), and myself (about 20 hours per week) worked on the project in cooperation with Jorge Rodriguez of the AED group. Mr. Colligan left the project in February and was replaced by Robert Berman who is now working about 15 hours per week. Mr. Garman has had other demands placed upon his time and has not contributed significantly to the project since February; Professor Corbato indicated in early May that the Multics group could not supply any additional effort at that time.

As a result of these personnel shortages, I can summarize my feelings about the state of AED on Multics as:

1. The project started off well and much of the most difficult work has been done.
2. The personnel on the project is now inadequate, especially since I believe one full-time Multics system programmer is essential to its success.
3. Access to Multics is not adequate to significantly speed up the process before Mr. Berman leaves the campus in mid-June.

The facts stated here regarding the status of and prospects for the AED in Multics project have been checked with Jorge Rodriguez.

I see at least three issues that ought to be considered as soon as possible:

1. Should AED be available in Multics?
2. If so, how is the present effort to be completed?
3. If a working AED compiler is installed, who is to be responsible for maintenance?

I would like to emphasize I believe it would be a major mistake to terminate this project. I consider FORTRAN inadequate for building interactive subsystems, and doubt the "full" PL/I will be available as soon as scheduled. I believe the AED system should be available on Multics, because of the value of the language to subsystem writers and because of the present investment in AED programs among many groups on campus. For example, all of the display software for the Kludge and ARDS is written in AED and large projects such as TROLL, INTREX and DYNAMO have many man-years invested in AED programs. AED is the only language now being considered for Multics implementation that exists on CTSS. I cannot believe that the decision has been made after serious reflection to scrap all the programs now running on CTSS; many of the ones most suited to conversion to the Multics environment are now written in AED.

It is clear that the bootstrapping effort currently in progress will not achieve its goal by June 30 when the AED project will terminate at MIT. The most one can expect, if the initiative is taken immediately, is to have at that date one person sufficiently trained to direct the project to completion. It is reasonable to expect that by June 30 the major pieces of the compiler will have been bootstrapped and some initial test runs will have been carried out provided that:

1. A full-time Multics programmer is assigned to the project immediately.
2. There is reasonable access to Multics, i.e., evening and weekends.

If it is desired to complete this project and to have ongoing maintenance of the AED system, then discussions with Doug Ross and Jorge Rodriguez of the possibility of assistance from their group on a contract basis after July 1 would seem to be appropriate. I hope that the decision will not be made to abandon the effort, but if it is to be made, I hope that it is made soon so no more time and effort is wasted.

JWB:ah

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