

17 September 1976

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Massachusetts Institute of Technology
Office of Sponsored Programs
77 Massachusetts Avenue
Room E19-702
Cambridge, Massachusetts 02139

Attention: Mr. J. F. Connolly

Subject: Project Guardian

Gentlemen:

Reference my correspondence dated 13 September which precluded further use by MIT of Contractor furnished Development Computer time pending resolution of a subcontract agreement.

By telephone conversation on 17 September 1976 between Mr. Connolly of MIT and Mr. Carlson of HIS, Honeywell hereby rescinds the above referenced restriction and allows MIT to use Multics computer time at CISL through 30 September 1976.

This is with the understanding that MIT will work with Honeywell towards reaching a contractual agreement on the work to be performed by MIT from the period beginning 1 July 1976 through 30 September 1977 and that the computer utilization will not exceed ten hours during the month of September.

In order to reach a contractual agreement, it will be necessary to resolve outstanding issues as identified in Attachment A. Since time is of the essence, MIT should address the unresolved issues along with Honeywell's revised comments, establish an official MIT position and arrange a meeting with Honeywell as soon as possible. Honeywell can meet with MIT here at McLean any time during the week of 20 September.

Due to revised Air Force requirements, it will be necessary to make revisions to the planned MIT SOW during our negotiations. These changes will not affect work prior to 1 October and should have very minor impact on further efforts. The revised Statement of Work is enclosed as Attachment B.

Very truly yours,

R. L. Carlson
Senior Contract Administrator

CONTRACTUAL ISSUES

1. Issue

Task Schedules and Completion Dates

Honeywell's Comments to MIT's Proposal

The proposal provides no task schedule nor does it confirm agreement with the schedules in Attachment A to the SOW. It is important that MIT efforts be completed consistent with overall program activities in order that MIT results may be factored into Honeywell designs. Does MIT propose to perform tasks consistent with the SOW schedule?

MIT's Response

The task schedule included in the statement of work represents the best estimate of the completion date of the various tasks, and MIT intends and expects that this task schedule will be part of the statement of work which is included in the final contract as negotiated with Honeywell. We intend to make our best effort to complete all tasks described within the limits of the schedule. See, however, the discussion of points 2 and 4 below.

Resolution/Open Items

Resolution - task schedules and completion dates will be included in the negotiated contract. ✓

2. Issue

Deliverable Subcontract Data Items (SDRL's)

Honeywell's Comments to MIT's Proposal

The proposal makes no mention of SDRL items. These are listed in Attachment B to the SOW. Does MIT propose to submit SDRL items consistent with SOW requirements?

MIT's Response

MIT agrees that it will deliver to Honeywell items described on the subcontractor data requirements list (SDRL) with the following three exceptions.

- A. The item SDRL 0002, monthly progress report, is an inappropriate report to be required of a research task

of the sort which MIT is undertaking as specified in the subcontract. This comment is not intended to include the monthly fiscal report which MIT now delivers, and will continue to deliver. Given the shortage at MIT of research staff at the level required to prepare such a report, it is most important that we not agree to its preparation. We feel very strongly that there is room for improved communication between MIT and HISI as to the current state and intended direction of MIT's research, and we are completely agreeable to the inclusion within the SDRL of any items which we mutually recognize as legitimately furthering this increased communication.

- B. The item SDRL 0022, semi-annual report, should be replaced with an annual report with a submittal date of 15 July. In previous years, an annual reporting period has been recognized as the correct interval for this report. An annual report due 15 July corresponds to the annual report generated by our group in the normal course of documenting its research. A semi-annual report due 15 January would have the very undesirable effect of placing an additional unwanted management burden on the very limited manpower we have of the sort appropriate for writing this report. It should be noted that on or about January 15th we hold a technical design review in which the various research projects related to this subcontract are presented and discussed. We feel that attendance at this meeting by appropriate HISI personnel will provide an effective means of increased communication between MIT and HISI.
- C. The item SDRL 0005 final report has a submission date of March 1, 1977 which has been changed from the schedule originally submitted to Honeywell by MIT of 15 July 1977. This is an inappropriate change; see the discussion under item 4 below.

Resolution/Open Items

Unresolved

A. & B. Open Items - Monthly Progress Report and Semi-Annual Report

Honeywell's contract with the Air Force requires monthly progress reports and semi-annual technical reports on all contract activities including subcontracts.

Honeywell requests that MIT consider the following:

The Principal Investigator will schedule a technical review meeting each month with presentations of each MIT task in progress. A Honeywell representative(s) will

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attend these meetings for progress status information.

If necessary, Honeywell will schedule a technical interchange meeting to assemble information for the semi-annual technical report.

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SDRL Item 0002 would be changed to "Monthly Technical Review Meeting".

SDRL Item 0022 would be changed to "Semi-Annual Technical Meeting".

C. Honeywell is agreeable to submission of the final report no later than 15 July 1977. This report will include a review of the Reduction of Hardcore Tasks, and possibly the tasks associated with the analysis of input and output operations, and networking studies.

3. Issue

Networking Study Tasks

Honeywell's Comments to MIT's Proposal

Section 2.0 of the SOW covers Networking Interface Studies and identifies a task to define a specific list of tasks. Candidate tasks are listed for consideration by MIT. The MIT proposal does not address any of the tasks for consideration, nor does it include the study task. The networking tasks proposed by MIT involve defining the external I/O methods to be used in the secure Multics system. Honeywell CDRL Item A024, I/O report, already has accomplished this effort and any work that MIT did in this area would be redundant and unnecessary.

MIT's Response

The section in the MIT proposal entitled New Tasks does not describe or propose a study of external I/O in general, but only that to multiplexed devices such as front end processors and networks. The two tasks explicitly recognize Honeywell's interest in the connection of networks to the front end processor in section 2.2. MIT feels that it is crucial that we investigate the protocols for interconnecting Multics and the SFEP as part of this research, as discussed in section 2.1, in order that we develop an overall solution to the network connection problem which is consistent and uniform. Consistant without current estimates of manpower availability, the tasks described in the proposal are rather more limited in scope than these proposed in the list of candidate tasks in the SOW. Taking into account our own

interests and capabilities, and discussions we have had with the Air Force, we feel that section 2 from our proposal is a reasonable description of the work we wish to do on this area. We propose that our section 2 replace the current material in the SOW.

Resolution/Open Items

Unresolved

It will be necessary for Honeywell and MIT to resolve this issue by December 1976. MIT should provide an estimate of the effort associated with network connection tasks.

4. Issue

Final Technical Report

Honeywell's Comments to MIT's Proposal

SOW task 1.8 requires a final report on the kernel design project, SDRL 0005. It is understood that key members of MIT team will not be available for future MIT Multics activities. In light of this, the proposal should comment on how MIT plans to produce this report, its content and depth.

MIT's Response

MIT is confident that the final report produced to describe the Kernel redesign project will not be degraded as to content by the departure of the various faculty members previously associated with the research. There remain competent people, including the principal investigator for the project, who are fully cognizant of all aspects of the research being performed. The only impact which the reduction in top level personnel will have on the final report is one of preparation time. Faculty, especially during the academic year, have only a limited amount of time available for research, and the reduction in faculty will imply that the preparation of the report will take a larger number of months. For this reason, MIT initially proposed a submission date for the final report for 15 July 1977, and we propose that this still be considered the correct submission date. Any attempt to produce the report before this date will, in our opinion, inevitably imply that the report might be of lower quality. If Honeywell is concerned that a submission date of 15 July is late enough that the report will fail to impact on Honeywell's design specification, we request that Honeywell not view the final report as the only means by which its personnel may become acquainted with our overall conclusions. Our annual report for the fiscal year

closing July 30, 1976 contains a discussion which provides an integrated view of some of the more important research done by MIT to this date, and we are happy to work actively to inform appropriate employees of HISI about the overall merits of the various research tasks now under way. We again propose the January design review as an especially suitable vehicle.

Resolution/Open Items

Resolution

Honeywell is agreeable to submittal of the final report not later than 15 July 1977. As stated in MIT's proposal this report will include a review of all of the Reduction of Hardcore tasks to assess their cumulative impact on the size, performance, structure, and simplicity of the kernel required to support security requirements. The new tasks associated with the analysis of input and output operations and networking may also be included in the final report.

STATEMENT OF WORK

HIS/MIT

For the Period 1 July 1976
Through 30 September 1977

INTRODUCTION

The intent of the effort described herein is to:

- 1) Complete work in progress on concepts to reduce Multics hardcore to permit certification.
- 2) Address new security issues relevant to the Guardian program, as mutually agreed upon by the subcontractor and contractor on or before 31 December 1976.
- 3) Complete all technical tasks and prepare a comprehensive final report covering all subcontractor effort from 1 January