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Advanced Technology Activity for SCAMP

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The Palo Alto Scientific Center is interested in maintaining a productive role in the development of SCAMP. We foresee the need of various project activity which is highly desirable but which may not comfortably fit into your present SCAMP development plans because of time or headcount constraints. This ad. tech. activity would be aimed at producing and evaluating various new programs and hardware modules for use in the SCAMP program. Specifically, the following activities are suggested:

1) SCAMP DISK
   - Install a mini disk on SCAMP prototype in Los Gatos.
   - Prepare programs to support disk I/O (preferably as an extension to the present SCAMP 1130 emulator).

2) SCAMP GRAPHICS
   - Program support D. Roberson's experimental graphics device, allowing APL users to access the graphics display.

3) SCAMP APL INTERPRETER
   - Modify the APL/1130 Program Product to run on SCAMP (with disk).
   - Evaluate performance and function
   (Note 1: this could be an extremely important activity which develops a backup or alternative approach to the SCAMP 1 or 2 APL interpreter.)
   (Note 2: this 1130 APL system offers larger workspace, full APL operator set, no restriction on vector size, and increased precision of 9 digits).

4) SCAMP-ORIENTED LANGUAGE PROCESSING ARCHITECTURE
   - Develop and test an intermediate meta machine architecture for supporting language processors. Specifically supported would be APL and BASIC, although other languages such as RPG or COBOL should be also supportable.

   This meta machine (M-Machine) approach will be designed in such a way as to minimize the effort needed to transport APL and BASIC from one machine environment to another. Thus it may be practical to consider writing one more APL interpreter and one more BASIC system which could be "transplanted" into various machine environments over the span of many years and at a considerable savings in cost, gain in development speed and flexibility, and increased product reliability.

5) HIGH PERFORMANCE SCAMP ENGINE
- Develop and install a GEM engine in SCAMP prototype.
- Write GEM programs to emulate 1130 (including disk file and graphics support).
- Evaluate performance.

RECOMMENDATIONS

1) In order to accomplish all or any of the above activities, it is recommended that a small group of 2-4 college student programmers be hired on a part-time basis. These people would report to the Scientific Center in the usual manner, and would work with Roy Harper's engineering group and our staff members in accomplishing the above project activity.

2) GSDHQ should cover the expenses for this activity which are roughly as follows:

88 hrs./mo. x $3.95/hr. x 4 =	$1,390/month salaries, plus
10 hrs./mo. 145 time x $60/hr. =	$ 600/month computing
TOTAL	$1,990/month

Note: Roy Harper's group also desires the services of one or two technicians to aid in fabricating SCAMP I/O and GEM hardware. Their expense was not added into the above cost estimate.

Please let me know whether the above plan meets your objectives and, if so, when you wish to start.

Paul J. Friedl

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