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OFFICE MEMORANDUM

TO J. Bradbury

DATE April 2, 1980

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FROM P. Berardo *no*
SUBJECT PIPLAN, VAX, AND CCF
SYMBOL MP-3
MAIL STOP 844

1. Assuming that MP-3 CCF costs are essentially all related to PIPLAN, development costs have approximately doubled during FY 80 from FY 79, based on Hal Butler's recent charts presented to the LCC. This is generally explained in terms of the following:

a. Actual patient plans with modulated beams currently require over three times as much calculation time as analysis runs for development. For FY 80, roughly half of our runs have been patient plans.

b. Our current CCF priority-point allocation has, as intended, fostered more rapid development. Thus, total cost has been compressed into a shorter time. It is probably true that some FY 81 development costs may be compressed into FY 81.

2. A LAMPF VAX is still our target system for PIPLAN production calculations with interactive work done on the Biomed PDP-11/45. In the first week of January 1980, we succeeded in installing the CCF calculation on the LOB VAX. A full-volume, three-dimensional calculation on the VAX processed rays at the rate of 1294 rays/minute. The same calculation at the CCF (CDC 7600, LTSS) processes 6091 rays/minute, 4.7 times faster. Recent speed improvements are reflected in these numbers and reinforce the suitability of the VAX for PIPLAN production calculations, which now appear to require only about one hour per port.

3. The effort to convert to the VAX is motivated by economics, convenience, and quality of calculation. The virtual memory operating system of the VAX will provide a much needed improvement in resolution and accuracy with a negligible increase in system overhead or elapsed time

4. The current high demand for the LOB VAX, the lack of VAX disk space, and the urgent requirement of a production version of PIPLAN all mitigate against further conversion effort at this time.

5. By the beginning of FY 81, there will be another operational VAX (although the CCR VAX will no longer be generally available), three more

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RP-06 disks will be on-line, and a high-speed DECNET link will be available between Biomed and the LAMPF Computing Facility to exchange data files. At that time, we expect to convert to the VAX for the bulk of our calculations.

cc: L. Rosen
H. Butler
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