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3-MAY-78

Dynamic Scan Treatment Control System

J. A. Helland

REPOSITORY LANL/ARC
COLLECTION MP-00
BOX No A-91-011
FOLDER 85-10

I. Hardware

A. Present status

1. The hardware system is essentially finished and working, except for certain safety aspects that are to be added (see below).

B. New additions

1. The touchguard system needs to be activated so the upward motion of the couch is halted when the patient or couch touches the sensing device below the range-shifter. It might also be desirable to incorporate a physical stop for the upward motion.
2. Plans were made to install covers over the manual controls in the treatment room, so that the computer control of the couch is disabled whenever the cover is raised for manual control.
3. We are also planning on adding to the 11/03 an alarm system, which will be set off when the 11/03 halts. This alarm, also, will disable computer control of the couch by opening a relay in the "Couch Computer Control Interlock Chain."

C. Timetable

1. Item I.B.1 will be the most difficult to institute, but we hope to have a reasonable system installed by July 1, 1978. This system may be changed many times before a "final" design is settled on.

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2. Items I.B.2. and I.B.3. have already been started and should be completed by June 1, 1978.

II. Software for PDP-11/03

A. Present status

1. The 11/03 software system is essentially finished, but certain aspects of it need to be debugged and/or "tuned." As with other software, this software will continually evolve as we gain experience, and as the medical personnel make new demands on the system.

B. Debugging

1. The only portion of the current software that hasn't been debugged relates to the background, wherein the optical shaft encoders and the position pots are compared to detect hardware malfunctions. Of course, with respect to the foreground, not all combinations of treatment modes have been tried, so unknown problems may still be discovered.

C. Tuning

1. The parameters relating to the actual moving of the couch in each direction still need fine adjustment. It is even possible that these parameters will be a function of the weight on the couch.

D. Additions

1. The code to facilitate a new mode of dosimetry will be added to the 11/03 software system.
2. Requests for other additions are anticipated.

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E. Timetable

1. It is doubtful that the software for the 11/03 will ever become totally stable.
2. Items II.B.1. and II.C.1. are currently being worked on and should be in good shape by June 1, 1978.
3. Item II.D.1. should be ready by July 1, 1978.
4. Item II.D.2. will probably extend for several years.

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