

PS COMPUTER USERS COMMITTEE (CUC)

Summary of meeting No 5 - April 2, 1974

Present : O. Barbalat, G. Baribaud, H. van der Beken, M. Bouthéon,  
H.E. Davies, A. Krusche, H. Kugler, F. Rohner, A. Silvermann,  
K.H. Schindl, D. Simon, U. Tallgren, H. Ullrich

\* \* \* \* \*

The minutes of meeting No 4 (MPS/DL/Min. 74-10) were approved without comments.

1. Local Consoles

The users had been invited to list their requirements. They are based on the concept that the various subprocesses are attached to a front-end computer (generally a PDP/11-10) which has mainly an on-line equipment monitoring function.

A note giving the requests of the BR-LI and AE Groups was distributed and is annexed to these minutes.

1.1 Common Features

- The rôle of the local consoles is essentially to access a subsystem for testing, checking and maintenance;
- Alphanumeric display and keyboard;
- Medium speed input/output device<sup>\*</sup>, to load programs, large data sets or produce dumps;
- Simple and easy to use by hardware technicians;
- Availability of an interpreter.

---

\* This is mainly useful during the implementation phase and would not be required later if the various possible programs are loaded on disks and can easily be called from the local console keyboard.

## 1.2 Special Requests

### a) Linac

For the new Linac, a full control room is planned. The consoles have features similar to the central PS consoles discussed at CUC meeting No 3 (MPS/DL/Min. 74-7, item 1).

A report on the subject by U. Tallgren is in preparation (MPS/LIN/Note 74-6). It would consist of 2 maxi-consoles attached to the "central" computer and 2 midi-consoles like devices with direct access to the front-end computer. A 5th (mobile) local console would be used for hardware checking in the equipment gallery. Only two of these 5 consoles would have to be simultaneously active.

Some of the characteristics of the Linac consoles were discussed, such as the type of display (Tektronix 611) and the usefulness of midi-console features vs maxi-consoles. Although the Linac choices did not convince some of the other users, one had to face the fact that in view of the Linac project schedule, a fully compatible solution cannot be adopted. (The new Linac control room must begin to work by May 1975 to allow the planned measurements on the preinjector beam).

### b) Booster

- The console should be mobile as the present PDS1.
- Some midi-console features (similar to the Linac) are desired (knobs, touch panel).
- The console should be able to allow booster operation with reduced capacity in case of central system break-down.
- The front-end computer would also be used for pulse to pulse modulation.

### c) SM\_Group

- The main special request is the possibility to access some PS parameters (intensity, ejection spill) to allow correlation between some equipment behaviour (say, a current ripple and the machine performance).
- In addition to the keyboard, interaction via knobs is desired.

### d) MU\_Group

The hardware checking function for the external beam equipment is done by the PO/Siemens computer. A new setting up equipment (scalars etc.) is being developed in a computer compatible way (CAMAC).

e) CCI Group

Two mobile consoles with fast transmission allowing direct access to any given address and capable of manipulating raw data are necessary for the system maintenance.

f) PO and AE Groups

Requests are compatible with the common features given previously.

1.3 Discussion

- The general remarks made at CUC meeting No 3 (MPS/DL/Min. 74-7, item 2) remain fully valid. In particular, the Operation insists that the activation of a local console should be subject to a veto which can be cleared from the MCR only.
- The adoption of a NODAL interpreter was discussed. Lab II would like to introduce it on its PDP-11, and there is a possibility of collaborating on its implementation (sharing the costs). The availability of this interpreter could save time and effort (in particular for the new Linac) but before, some MPS resources would have to be spent on this. It appears that it is not ideally adapted to the PS situation where one has 3 rather independent machines instead of one; process variables are handled in a data base, while the SPS uses the "system variable" concepts; programs cannot be readily exchanged and may have to be rewritten because of difference in interfaces; but finally one thinks along incorporating ISAAC features into NODAL, so that in the long run the CPS and SPS interpreters will (at least externally) look very much the same.
- Among the software difficulties created by some of the requests, one can list:
  - . access of a front-end computer by more than a single local console
  - . access from a local console of data relative to other sub-systems, however only a few data will be exchanged on this level.

2. Central Computer System

- The system configuration will be presented by H.E. Davies at the next meeting (end of April).
- The facilities for program development, which are rather limited at the moment, could also be discussed on this occasion.

Distribution

PS Scientific Staff

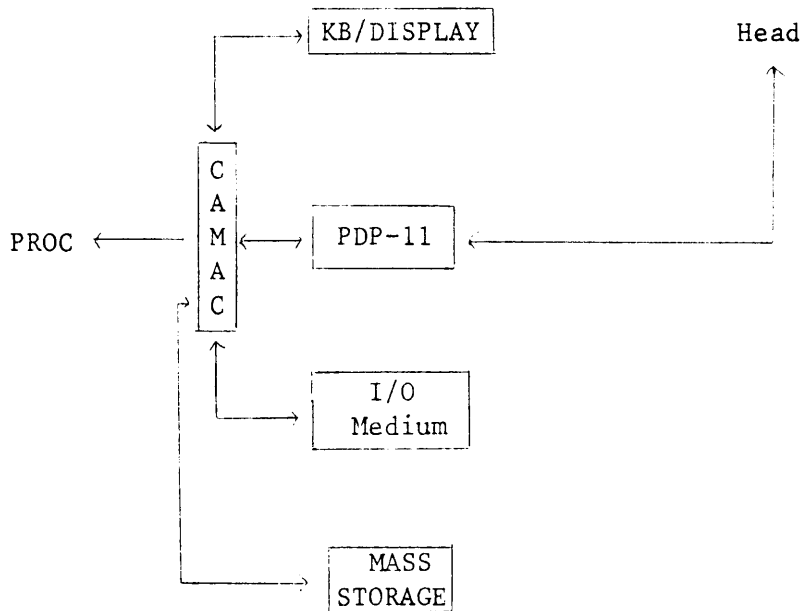
PS Programmers

/ed

## A N N E X

Some informal meetings between Booster, Linac and AE Groups led to the following essential requirements concerning the front-end computers and demands (software as well as hardware) on the CCI Group.

### A CONFIGURATION OF FRONT-END COMPUTERS



### B WHAT CCI SHOULD PROVIDE

1. Interpreter : full in 11/45, sub-set in 11/10
2. Communication
3. Software and hardware for programme development
4. Operating systems
5. Data-bank management
6. Centralized console.
7. Software education.

### C ESSENTIALS

The PS-computer complex has to survey, control and optimize the PS as "PROTON FACTORY". The entire process is divided into sub-processes which will be computerized. Although the system will be a centralized one, the following essentials have to be provided for the subsystems.

1. Simultaneous development of subsystems

- 1.1 to keep given time-frames
- 1.2 to allow piece-meal-wise implementation and upgrading of systems
- 1.3 to enable, from the beginning, full equipment and modular software tests
- 1.4 to study continuously stability of subsystems.

2. "Cut" from the head "Operation"

- 2.1 for problem isolation
- 2.2 for redundancy
- 2.3 for fast system recovery
- 2.4 if cut the subsystem must still allow :
  - 2.4.1 run of real-time jobs
  - 2.4.2 setting-up (at least coarsely) of the sub-process.

3. Access to the sub-process from the front-end computer

- 3.1 for fast equipment surveillance and maintenance
- 3.2 see 2.4.2
- 3.3 to encourage equipment specialists of any "level" to use the computer.

G. Baribaud  
H. Kugler  
K.H. Schindl  
U. Tallgren