3/2/67

Functional Specification of a development tool needed for the Multics System Tape Generator Program

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One addition to the 6.36 system is needed in order to implement the desired features of the 6.36 Multics System Tape Generator program to be used in phase 0.5, 1, and II Multics: a facility for writing magnetic tape in the Multics standard tape format.

6.36 Multics standard tape format writing facility.

A 645 library subroutine is needed which accepts calls to write on a magnetic tape. This subroutine probably escapes to the 635 GECOS environment and performs calls to GEFRC (if possible, otherwise direct calls to GEIOS may be needed) to write a magnetic tape in the Multics standard magnetic tape format. This format is described in detail in MSPM section BF.6.01. It is not anticipated that more than one such tape will be written on any one job.

The library subroutine accepts the following four calls:

```
call attach_tape(err);
```

This call performs any system functions not already accomplished by GECOS control cards (e.g., allocating a drive, mounting a tape, etc.) It also writes on the beginning of the tape the standard label sequence.

```
call write_tape(buff, n, err);
```

The n words located in buff(1) through buff(n) will be copied from buff and added to the stream of words destined for the tape. Subroutine write_tape will break up this stream into blocks of the appropriate size, add header and trailer information, and write the blocks onto the tape. Write tape will insert EOF records where appropriate for the standard format.

```
call detach_tape(err);
```

The final physical record is written onto the tape and a standard end-of-tape sequence is written; the tape is rewound and the drive deallocated.

```
call get-err-count(count);
```

The tape writing subroutine will keep track of the number of error records which it has written; this call, which may be made at any time between the "attach_tape" and the "detach_tape" calls, will return the current value of this number.

In each of the first three calls, err is a return argument which, if zero, means that the call was handled successfully, and if non-zero means that the call failed for some reason. A non-zero return should be accompanied by a diagnostic message in the error file.

The 6.36 tape writing facility can be used as early as 3/20/67. If not available, it will begin to block other work on 3/27/67.