TO: MSPM Distribution FROM: C. Marceau SUBJECT: BD.6.10 DATE: 11/17/67

Attached is a revision of BD.6.10 which reflects the following changes:

- 1) process group directory names will have a standard length (50 characters). This should expedite conversions between directory names and the structures used elsewhere in the system (eg, access control) to represent process-group names.
- 2) Per-process and per-process-group segments are accessible to all instances of the user.
- 3) Gdir is not a hardcore procedure since it can obtain the process-group's name from an outer ring segment (see BD.6.11).

MULTICS SYSTEM-PROGRAMMERS " MANUAL

Published: 11/17/67 (Supersedes: BD.6.10, 09/27/67)

Identification

process-group directories C. Marceau

Purpose

Multics modules generate and use a certain amount of per process-group information. For example, attachments of I/O devices and frames are process-group-wide and hence the <u>attach table</u> is per-process-group. Process-profile segments (see BQ.4.03) are usually shared among all working processes in a process-group. Such process-group-wide segments are conveniently placed in process-group directories where:

- 1) They are locatable by process-group-name (which consists of the name and project id of the user followed by an instance tag see BQ.0); and
- The information needed to log out or to save the status of the group is collected in one directory.

<u>Discussion</u>

Each process-group directory resides in the process-group directory directory and has as its name the process-group name. For review, we remark that the process-group name is composed of

user name (24 characters)

project ID (24 characters)

instance tag (2 characters).

The three elements are concatenated to form the directory name, e.g.

"John_Doe_____ MAC_____aa" 16 blanks 21 blanks

The name of the process-group directory directory is "group_dir_dir" and hence the path name of a process group directory might be

">group_dir_dir>John_Doe_____MAC_____aa" 16 blanks 21 blanks MULTICS SYSTEM-PROGRAMMERS * MANUAL

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Access Control

A summary of access control modes for directories can be found in BQ.4.00 and may be a useful reference in the following discussion.

The process-group directory directory can be read or modified only by procedures executing in the system control process group (see BQ.O). That is, only this process group is allowed to create other process groups. In particular, user control processes create interactive user process-groups and the absentee monitor process creates absentee user process-groups.

The process-group directory for a process-group is accessible for reading and writing to all process-groups belonging to the same user. In addition, it may be searched (execute attribute) by any process in any process-group, from ring 0. This allows a device manager process in some other group to communicate I/O data to the process group, and also allows other users to locate segments which may be used in inter user communication.

<u>Gdir</u>

The procedure <u>gdir</u> (see BY.17.03) allows any process in a group to discover its process-group directory path name. Of course, any procedure which knows the process-group name (user name and project plus instance tag) can arrive at a path name through concatenation.