

## DISC FILE MANAGEMENT (M:DFM)

### Calling Sequence

Upon entry, M:DFM requires the address of the Logical File Description Table (T:LFT) of the file on which the operation is to be performed. It is given in the A4 register. A3 contains the entry point number for D:RMAC, because Disc File Management is part of the D:RMAC program.

### Work Areas and Tables

A buffer of 208 words is required in the dynamic allocation area to block and deblock records for sequential files.

Two tables are used:

- Logical File Description Table (T:LFT)
- Disc Control Table (T:DCT)

### Input/Output Files

Disc File Management uses the disc file codes /F0 to /FF to perform physical I/O operations.

### Memory Layout

M:DFM must be link-edited with the supervisor and is therefore always loaded into the monitor partition in memory. It cannot be declared as a read only program.

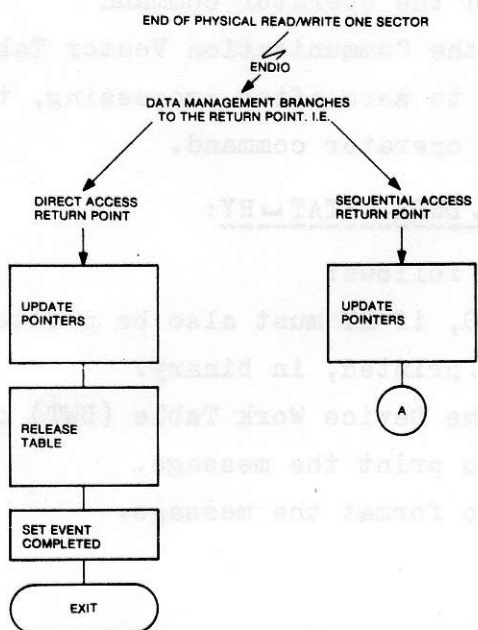
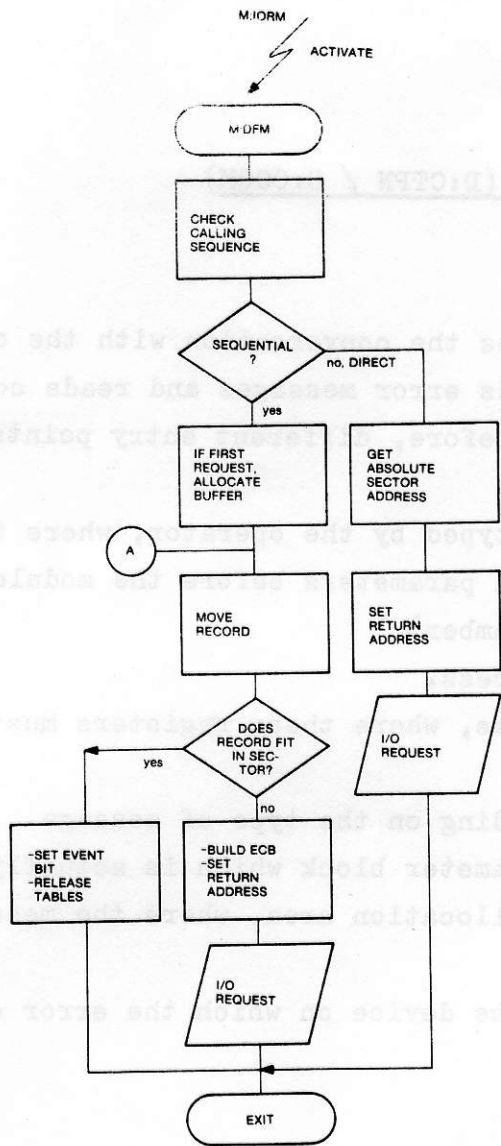
### Functional Description

The M:DFM module performs all I/O operations for user logical files. It is activated by the M:IORM module.

For sequential files, it blocks and deblocks records.

For random files, it calculates the absolute sector address from the relative sector number and vice versa.

M:DFM also allocates any buffers or granules which are required.



## OPERATOR COMMUNICATION (D:CTPN / D:OCOM)

### Calling Sequence

The module D:OCOM handles the conversation with the operator via the typewriter. It prints error messages and reads commands typed in by the operator. Therefore, different entry points are available:

- to process a command typed by the operator, where the following registers must contain parameters before the module is activated:
  - A3 = 0 (entry point number)
  - A4 = input buffer address.
- to print error messages, where these registers must contain the following parameters:
  - A3 = 2, 4 or 6, depending on the type of message.
  - A4 = address of a parameter block which is actually a work area in the dynamic allocation area, where the message is formatted, or:
    - DWT address of the device on which the error occurred.

### Work Areas and Tables

To process a command typed in by the operator:

- the buffer used to read the operator command
- in the word CVTOCM in the Communication Vector Table (CVT) the sign bit must be reset to zero after processing, to allow the module to accept a new operator command.

To print the message PU, DNDA, STAT, RY:

the work area is used as follows:

- word 0: retry flag: 0, if RY must also be printed out.
- 1: status to be printed, in binary.
- 2: address of the Device Work Table (DWT) of the device.
- 3 - 8: ECB used to print the message.
- 9 - n: are used to format the message.

To print the message DKER the work area is used as follows:

- word 0: status to be printed
- 1: sector number
- 2: address of the Device Work Table (DWT)
- 3 - 8: ECB used to print the message
- 9 - n: are used to format the message.

To print the message TC OFF, the work area is used as follows:

- word 0 - 5: ECB used to print the message
- 6 - n: are used to format the message.

### Input/Output

The input and output files for this module are mainly combined in the operator's typewriter, with file code /EF.

For the dump command, however, D:OCOM also must use the disc unit file code (/FO to /FP) and the print file (/20) which can be assigned to any output device.

### Memory Layout

The operator communication package consists of several modules. The D:CTPN module (used to read control panel key-ins) is the only one which is memory resident. The others are always read only.

If desired, the user may also declare D:CTPN a read only program, but the priority level to which it is connected must be selected carefully, because otherwise the system response time to the control panel interrupt may become too high.

### Function Description

The following components are included in the operator communication package:

INTCP is the control panel interrupt routine.

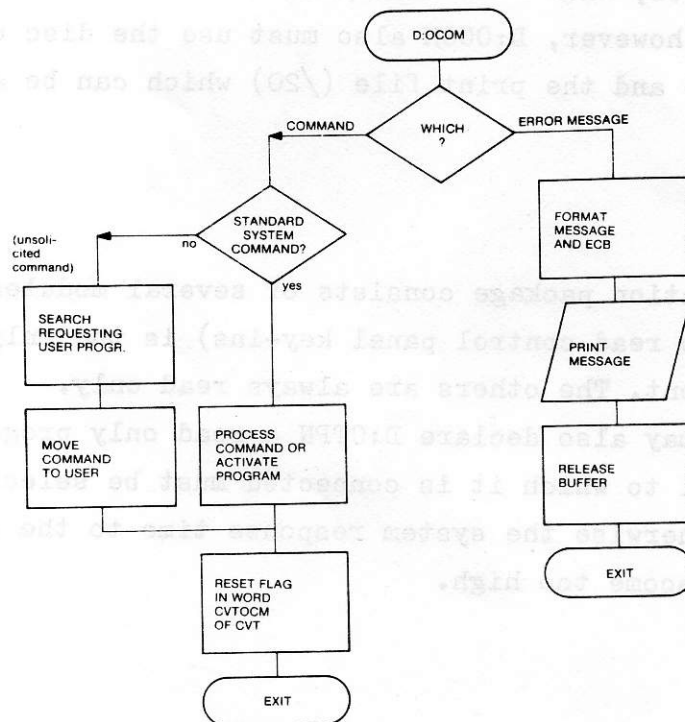
D:CTPN is the control panel program, i.e. it handles the input of operator messages (memory resident).

D:OCOM processor the input of operator messages or the output of system messages (normally disc resident).

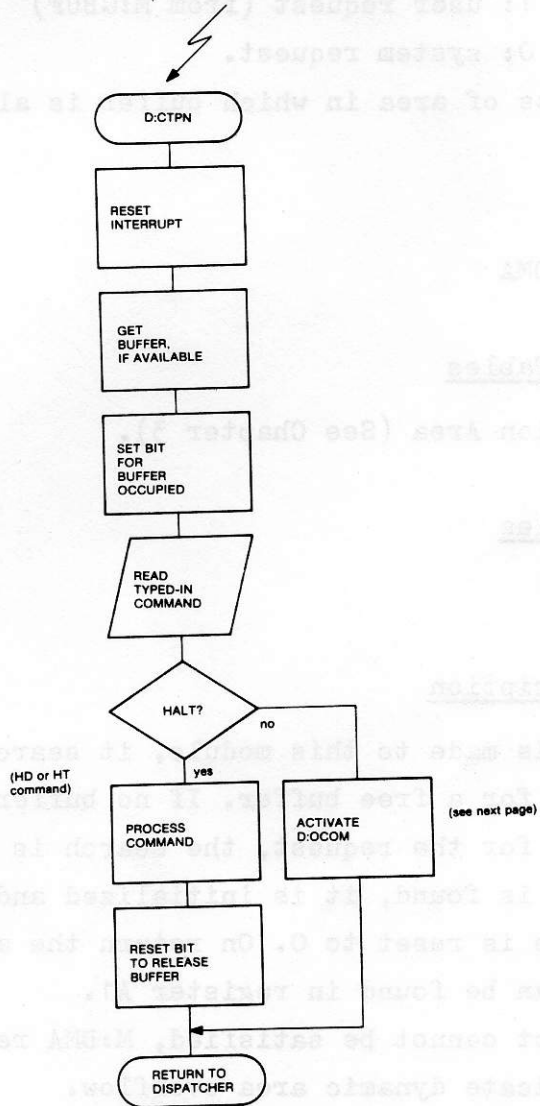
The D:OCOM program is used mainly to print error messages to the operator and to process commands typed in by the operator, such as CC, RY, RD, DM, DD, etc.

After the command has been read by the D:CTPN module, control is passed on to D:OCOM to analyze and process the command.

All commands, excluding Dump and Connect, are processed by D:OCOM. The Dump and Connect commands require the use of external devices and are therefore processed by the D:DUMP module, which must run at a lower priority level than D:CTPN and D:OCOM.



CONTROL PANEL INTERRUPT



## M:DMA (DYNAMIC MEMORY ALLOCATION HANDLER)

### Calling Sequence

A1: Length of requested buffer, in characters (bits 1 to 15).

If bit 0 = 1: user request (from M:GBUF)

If bit 0 = 0: system request.

A3: Base address of area in which buffer is allocated.

INH

CF A15, M:DMA

Entry Point: M:DMA

### Work Areas and Tables

Dynamic Allocation Area (See Chapter 3).

### Input/Output Files

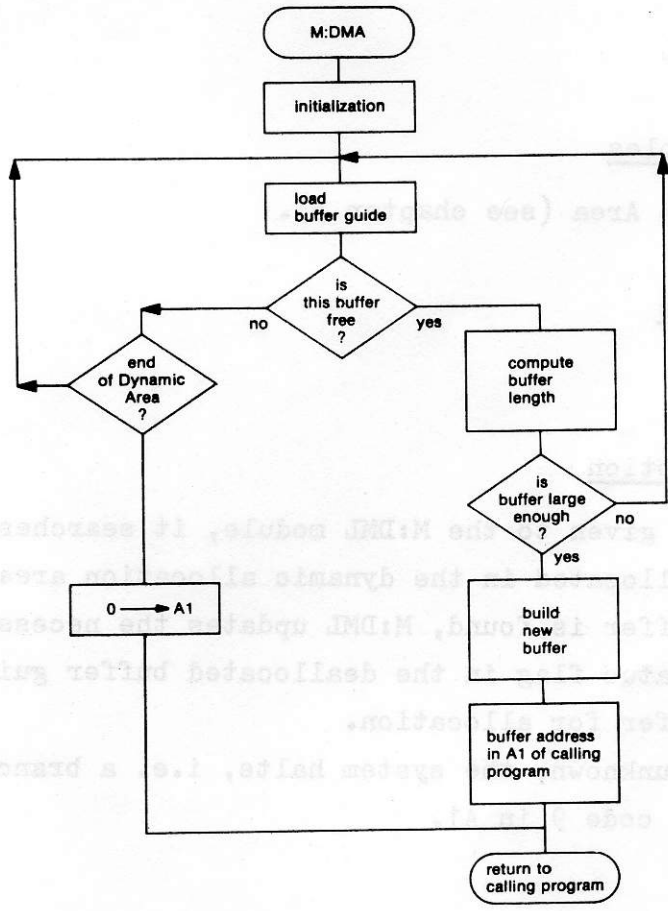
None.

### Functional Description

When a request is made to this module, it searches the dynamic allocation area for a free buffer. If no buffer can be found which is large enough for the request, the search is restarted. When a suitable buffer is found, it is initialized and the status flag in the buffer guide is reset to 0. On return the address of the requested block can be found in register A1.

In case a request cannot be satisfied, M:DMA returns A1 with the value 0, to indicate dynamic area overflow.

A1: Address of the buffer which must be deallocated.  
A2: Base address of area containing the buffer.





## M:DML (DYNAMIC MEMORY DEALLOCATION HANDLER)

### Calling Sequence

A1: address of the buffer which must be deallocated.

A2: base address of area containing the buffer

INE

CF A15, M:DML

Entry Point: M:DML

### Work Areas and Tables

Dynamic Allocation Area (see chapter 3).

### Input/Output Files

None.

### Functional Description

When a request is given to the M:DML module, it searches the buffer which must be deallocated in the dynamic allocation area (address in A1). If the buffer is found, M:DML updates the necessary buffer guides and the status flag in the deallocated buffer guide, thus returning the buffer for allocation.

If the buffer is unknown, the system halts, i.e. a branch is made to D:HLT, with error code 9 in A1.

