

IDMS

INITIAL DRUM SETUP

FASBRAND UTILITY

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2.0 GENERAL

The Initial Drum Setup (IDMS) is a service routine required by the U1050 Fastrand Software. One of its functions is to accept parameter cards, construct Directory entries, and write them on the drum. Its other function is to write the Drum Locator/Loader, along with the configuration definition, at the beginning of drum unit zero. IDMS must be run before the software can operate on Fastrand drum(s); running IDMS will be the initial step in using Fastrand drum(s).

IDMS assumes that there is no information of value on the drum when it starts. It should never be run if data which is needed remains on the drum.

At the time each function card is processed a printing will occur describing the function performed.

If a U1004 is on line, sense switch #1, on the U1050 processor, must be turned on; otherwise this switch must be off.

3.0 CLASSES

Kinds of drums which are available are Fastrand I, Fastrand II, and Modular Fastrand which has one master and up to seven slaves. Types of drum area are write Lockout area, Fastbands, and Normal. Attached to the Synchronizer may be up to eight drums of the same or different kinds, each with various types of drum areas.

Initially it is necessary to define separately each kind and type of drum area which will later be referenced, (Classes). It is possible to divide kinds and types of drum area into as many Classes as may be convenient as long as all sector addresses within a Class are contiguous. Note the following rule:

Each Fastrand Unit may be divided into one or more classes of each of the following types of areas: Lockout, Normal, and Fastbands; moreover, within the limits of contiguous drum addresses the Lockout, Normal, and Fastbands of the sub-units of the same Modular Fastrand may be combined.

Thus it is possible to later request drum area within the Class required by a particular file. A file must fit entirely within one class.

IDMS provides the ability to define Classes prior to using the drum system.

4.0 DIRECTORIES

4.1 System's Directory

The System's Directory describes all of the aforementioned Classes. IDMS writes the System's Directory (SD) on the drum immediately following the drum boot and loader-locator coding. The first entry of the System's Directory is the System's Directory Descriptor which describes the System's Directory (the SDD entry); subsequent entries each describe the beginning and ending drum addresses of each class of drum area which will later be referenced.

4.2 File Directories

At the beginning of each class of drum area, IDMS writes an entry known as the FDD (File Directory Descriptor). This entry describes the FD (File Directory). The information in the FDD determines what portion of this drum class is available for data files, and which portion is to be reserved for future FD entries (written by the file control routines), which will in turn describe the data files. For Systems Areas, this is a dummy entry. The name of all FDD entries is FLEDIRECT.

4.3 System's Areas

System's Areas are a special kind of class which are completely reserved for MIT files. These classes are defined as files which contain object and/or source code, which are referenced, utilized and maintained by the drum utilities, the drum assembler, and the drum operating system. In

concept they correspond to Systems Tapes, and will hereafter be referred to as System's Areas.

System's Areas are required if the Fastrand oriented Operating System, Assembler and Utility programs are utilized. Optional and required System's Areas are identified by an asterisk (*) in the first character of the name. The second character is used to reference a particular System's Area. The System's Areas are as follows:

Character 0 1 2 -----7

- * * nnnnnn (required) This is the System's Area reserved for the Systems Programming MIT.
- * \$ nnnnnn (required) This is a scratch area required by the software.
- * A nnnnnn (optional) These are optional System's
- * B nnnnnn Areas which the user may wish to utilize
- * C nnnnnn in much the same way he uses tapes as
- : Systems Tapes. The second character is
- : an alphabetic A - Z.
- :
- :
- * X nnnnnn
- * Y nnnnnn
- * Z nnnnnn

In all cases nnnnnn is any six A/N characters which may be assigned to the System's Area Name.

The scratch area's required size in sectors, is expected to be approximately twice the number of lines generated by the largest program which will ever be assembled.

The Systems Area reserved for the Systems Programming MIT, and the other optional System's Areas must each be at least as large as the maximum size of the System they will ever contain, plus the size of the largest program it contains which may ever be updated. Because of the difficulty of changing the size of these areas, it is suggested that a generous allowance be made for future expansion within these areas. If a limited amount of drum area is to be allocated to these files, it is better to have fewer files with large areas, than to have more files with small areas.

In order to change any class sizes or limits it is necessary to dump the drum system, run IDMS, and then reload the drum system.

5.0 PARAMETER CARDS

The following parameter cards are read by IDMS, and appropriate action taken:

5.1 Optional; none, one or more, Type A, Clear card.

Col.	1	7	13	19
	A	S	CLEAR	p1, p2, p3, p4, p5, p6, p7

p1, p2, p3 = Beginning drum address, (unit, track, head).

p4, p5, p6 = Ending drum address, (unit, track, head); the drum will be cleared up to but not including this address.

p7 = Character fill, if the drum is to be cleared to other than binary zeroes.

S = Sub unit number if modular FASTRAND.

The clear function operates on multiples of tracks; thus no sector address is required.

5.2 One only, Type B, Configuration Card.

Col.	1	13	19
	B	CONFIG	p1, p2, p3, p4

p1 = 1050 or 1004 Type of on-line card Reader, Printer, and Card Punch

p2 = 80 or 90 Type of card reader and punch - omit this parameter if p1 = 1004

p3 = ROW or SERIAL Type of card reader - omit this parameter if p1 = 1004

p4 = 3A or 3C or 6C Type of Uniservos on 1050 - this parameter is omitted if no tapes are available.

5.3 One only, Type C, SDD card.

Col.	13	19
	C	SDD
		nn

where nn = the number of Classes of drum area (including System's Areas) within the system.

nn must equal the number of type D cards following this card.

5.4 Type D Cards.

Col.	1	7	13	19
	D	b	n---n	m---m, l---l, u, ttt, hh, ss

where b = beginning sub unit if Mod. F. R. (0-7); zero must be punched for Master unit. A Class may extend over more than one sub unit.

n--n = the number of files to allow for in this Class. This number +1 is the number of sectors reserved at the beginning of the area. One sector is required for a File Descriptor for each file which may later be placed in the Class.

m---m = an 8 character A/N name, bounded by apostrophes, by which this Class will later be referenced. The first character must be non-space. If the first character is an asterisk (*) this card describes System's Area, in which case n--n must be 1.

l--l = the length of Class in sectors. This field when added to the beginning address is the address of the first sector beyond this Class.

u = unit number where Class starts.

ttt = track position where Class starts.

hh = head position where Class starts.

ss = sector where Class starts.

If the last four parameters are omitted, it indicates that this Class of drum area should immediately follow the previous one. If this is the first card following a Type C card, this Class will immediately follow the System's Directory. If these parameters are omitted, this class and the preceding one must be in contiguous drum address locations.

If the last four parameters are used, they must be in ascending sequence.

If card columns 2-6 are unequal to spaces, the cards will be sequence checked.

5.5 Sentinel Card.

Col. 13

STOP

This card will terminate the current run. There are no parameters.

6.0 Validity Checks and Error Stops.

The following invalid conditions cause error stops, and require restarting:

- | | | |
|----|--|--------------------------------|
| a. | The number of type D cards is \leq nn
on the type C card. | <u>DISPLAY</u>
30 060010 60 |
| b. | Unable to write in the first and last
sector of each Class. This is an invalid
address or a locked out area. | 30 060011 60 |
| c. | First and last drum addresses reference
different units. | 30 060012 60 |
| d. | Non-unique names among Classes. | 30 060013 60 |
| e. | The number of type D cards is $>$ nn in the
Type C Card. | 30 060014 60 |
| f. | Card sequence error. | 30 060015 60 |
| g. | Drum address sequence error. If the card
being processed is the first type D card,
then the address referenced is less than
the address of the SDD entry plus nn on the
type C card. | 30 060016 60 |
| h. | No type 'B' card. | 30 060017 60 |
| i. | No type 'C' card. | 30 060020 60 |
| j. | No type 'D' card(s). | 30 060021 60 |
| k. | Sequence error on binary deck (DLL). | 30 060023 60 |
| l. | Check - sum error on binary deck (DLL). | 30 060024 60 |