SMPTE RECOMMENDED PRACTICE

RP 132-1994
Revision of RP 132-1985

Storage of Edit Decision Lists on 8-in Flexible Diskette Media

1 Scope

This practice specifies the file and directory structure of an 8-in flexible diskette used for the interchange of edit decision lists (EDL).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this practice. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this practice are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

ANSI X3.73-1980 (R1992), Single-Sided Unformatted Flexible Disk Cartridge (for 6631 BPR [Bits Per Radian] Use)

IBM GA21-9388-0, IBM Diskettes 1, 2, and 2D, Original Equipment Manufacturers' Information

IBM GA21-9182, IBM Diskette General Information Manual

3 Format

The diskette is a random-access device which allows for the processing of blocks of data independent of the data's physical or relative location. Each EDL is stored in a group of one or more blocks referred to as a file and identified by a unique file name. A directory of files is written at a particular location on the diskette and contains file name, length, and optional user-defined information.

4 Definitions

4.1 BPR: Bits per radian.

4.2 block: Four sectors (512 bytes).

4.3 byte: Eight bits.

4.4 data entry: Information entered in data form for computer processing.

4.5 directory entry: Directory information for a specified file.

4.6 directory segment: Two blocks (1024 bytes, commonly referred to as 1k bytes) dedicated to directory information.

4.7 file: One or more blocks of user data.

4.8 interleaving: Relationship of physical to logical sector numbers within a track.

4.9 logical sector address: Software assigned number to organize physical sectors to read and write data.

4.10 minimal directory: One directory segment.

4.11 octal values: Numbers having base 8.

4.12 physical sector number: Sector address recorded in byte 4 of the ID record.

4.13 sector: 128 bytes of information.

4.14 skew: Relationship of physical to logical sector numbers between tracks.

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4.15 track: Any of the concentric paths for the recording of data on the surface of a direct-access storage device, such as a diskette available to one read/write.

4.16 word: Two bytes (16 bits).

5 Media — Physical and magnetic characteristics

Edit decision lists shall be recorded on an 8-in single-sided diskette, as defined by ANSI X3.73.

6 Recording method and track format

The recording method, track, and sector formatting for EDL shall be such as described for single-density diskettes in IBM GA21-9388-0 and GA21-9182.

7 Logical sector numbering (see table 1)

Logical sector numbers are assigned to physical sectors by the following method:

1) First logical sector: The first logical sector (sector 0) is physical sector 1 on track 1.

2) Interleaving: Use all odd-numbered physical sectors, add 3, and use all even-numbered physical sectors.

3) Skew: Logical numbering on each track begins with the physical sector 6 greater than the previous track as specified in the formula: First physical sector used = ((6 * track number) -5) modulo 26

8 Data organization

Data is organized in consecutive blocks of four logical sectors each, in ascending order of logical sector number.

9 Diskette organization

9.1 Directory location and size

The directory begins at logical block 6 and consists of a linked list of directory segments.

9.2 Files

The files referred to by a particular directory segment shall be contained in continuous logical blocks.

10 Directory

10.1 Directory structure

A linked list of 1 to 31 directory segments. Each segment begins with a header of five 16-bit words. Certain header information is valid only in the first directory segment. There can be 72 directory entries per segment. The last directory entry must have an end-of-segment status word.

10.2 Directory segment header:

Number of segments available for entries — 1 word

Segment number of next logical segment — 1 word

Segment number of last segment opened — 1 word

Number of extra user bytes per entry — 1 word

Logical block number for start of data entries — 1 word

10.2.1 Number of directory segments

The first word of the directory header contains the number of directory segments available. This value is only valid in the first directory segment. Allowable values are 1 to 31.

10.2.2 Next logical segment

The second word of the directory header contains the segment number of the next logical directory segment. Allowable values are 2 to 31, and 0, which indicates no additional segments.

10.2.3 Last segment number

The third word of the directory header contains the number of the last directory segment opened. Each time a new directory segment is opened, this number must be updated. This value is only valid in the first directory segment. Allowable values are 1 to 31.

Table 1 – Physical to logical sector numbering

Track 1																										
Physical sector number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Logical sector number	0	13	1	14	2	15	3	16	4	17	5	18	6	19	7	20	8	21	9	22	10	23	11	24	12	25
Logical block number	0	3	0	3	0	3	0	4	1	4	1	4	1	4	1	5	2	5	2	5	2	5	2	6	3	6
Track 2																										
Physical sector number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Logical sector number	10	23	11	24	12	25	0	13	1	14	2	15	3	16	4	17	5	18	6	19	7	20	8	21	9	22
Logical block number	9	12	9	12	9	12	6	9	6	10	7	10	7	10	7	10	7	11	8	11	8	11	8	11	8	12
Track 3																										
Physical sector number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Logical sector number	7	20	8	21	9	22	10	23	11	24	12	25	0	13	1	14	2	15	3	16	4	17	5	18	6	19
Logical block number	14	18	15	18	15	18	15	18	15	19	16	19	13	16	13	16	13	16	13	17	14	17	14	17	14	17

10.2.4 Extra user bytes

Provision is made for the inclusion of optional user-defined words in addition to the seven specified below in each directory entry. The fourth word in the header specifies how many extra bytes are included in each of this segment's directory entries. This must be an even number and be the same value in all segments of the directory.

10.2.5 Starting block number

The fifth and last word of the directory segment header contains the logical block number of the start of the entries in this segment.

10.3 Directory entry format

The remainder of the directory segment is filled with directory entries. An entry consists of words containing the following information:

Status
File name (char 1-3)
File name (char 4-6)
File name extension (1-3 characters)
Total file length
Reserved
Reserved
Optional user bytes

10.3.1 Status

All values given below are octal numbers. Valid types of status words are as follows:

400 Tentative file.

1000 Empty file. The name and file extension fields are not used. The length of the empty file must be included.

2000 Permanent file. The name of the permanent file must be unique.

4000 End-of-segment marker. The last entry in a segment must have such a status word, and its remaining 6 words are not required.

12000 Permanent file with the "protect" bit set. This may be used to inhibit deletion of a file.

10.3.2 File name

This two-word value contains the symbolic name of the file. An encoding scheme referred to as RADIX-50 is used to pack three ASCII characters into one word. A limited character set (A-Z and 0-9) is allowed in this name. The file name may be 1 to 6 characters in length. Names of less than 6 characters must be padded with trailing spaces.

10.3.3 File extension

This word value contains the packed representation of the file extension "EDL" (017754).

10.3.4 Length

The number of logical blocks used by the file.

10.3.5 Reserved words

The directory entry contains two reserved words allowing for compatibility.

10.3.6 User bytes

Any even number of extra bytes as specified in the directory segment header.

Annex A (informative)
Additional data

A.1 Minimal directory

Systems without file-management capabilities may produce single edit decision list diskettes using the following minimal directory:

Header:	1	One directory segment
	0	No next segment
	1	Highest open segment is 1
	0	No extra bytes per entry
	10	Starting block number
Entry 1:	2000	Permanent entry
	74330	PADIX-50 for “SMP”
	76710	RADIX-50 for “TE(space)”
	17754	RADIX-50 for “EDL”
	746	Total file length (logical blocks)
	0	Reserved
	0	Reserved

All preceding numbers are shown as octal values. This is a suggested single-file directory allocating the entire diskette to the edit decision list file. The file name “SMPTE” is shown for example only, and may be any valid 6-character file name as described in 10.3.2.

A.2 ASCII to RADIX-50 conversion

Each ASCII character is translated into its RADIX-50 equivalent as follows:

Character	ASCII octal equivalent	RADIX-50 octal equivalent
(space)	40	0
A-Z	101-132	1-32
$	44	33
•	56	34
(undefined)	35	35
0-9	60-71	36-47

The RADIX-50 equivalent of three characters, C1, C2, and C3, are combined as follows:

RADIX-50 value = (((C1 * 50) + C2) * 50) + C3

Example:

RADIX-50 value of “EDL” = (((5 * 50) + 4) * 50) + 14 = 017754

Table A.1 provides an alternate method of translating from the ASCII character to its RADIX-50 equivalents.

RADIX-50 value = The sum of the first character entry + the second character entry + the third character entry.

Example:

RADIX-50 value of “EDL” = 017500 + 000240 + 000014 = 017754

A.3 RADIX-50 to ASCII conversion

To convert from the packed RADIX-50 value to the RADIX-50 octal equivalents of the three characters, C1, C2, and C3, the following rules are followed:

C1 = RAD-50 value / 3100
C2 = [RAD-50 value – ((RAD-50 value / 3100) * 3100)] / 50
C3 = RAD-50 value – ((RAD-50 value / 50) * 50)

Example:

RADIX-50 value = 74330 (SMP)

C1 = 74330 / 3100 = 23 = “S”
C2 = [74330 - ((74330 / 3100) * 3100)] / 50 = 15 = “M”
C3 = 74330 - ((74330 / 50) * 50) = 20 = “P”

All preceding numbers of A.2 and A.3 are octal values (see table A.1).

Table A.1 – Alternate conversion of ASCII to RADIX-50

Single character or first character		Second character		Third character	
Space	000000	Space	000000	Space	000000
A	003100	A	000050	A	000001
B	006200	B	000120	B	000002
C	011300	C	000170	C	000003
D	014400	D	000240	D	000004
E	017500	E	000310	E	000005
F	022600	F	000360	F	000006
G	025700	G	000430	G	000007
H	031000	H	000500	H	000010
I	034100	I	000550	I	000011
J	037200	J	000620	J	000012
K	042300	K	000670	K	000013
L	045400	L	000740	L	000014
M	050500	M	001010	M	000015
N	053600	N	001060	N	000016
O	056700	O	001130	O	000017
P	062000	P	001200	P	000020
Q	065100	Q	001250	Q	000021
R	070200	R	001320	R	000022
S	073300	S	001370	S	000023
T	076400	T	001440	T	000024
U	101500	U	001510	U	000025
V	104600	V	001560	V	000026
W	107700	W	001630	W	000027
X	113000	X	001700	X	000030
Y	116100	Y	001750	Y	000031
Z	121200	Z	002020	Z	000032
$	124300	$	002070	$	000033
•	127400	•	002140	•	000034
Unused	132500	Unused	002210	Unused	000035
0	135600	0	002260	0	000036
1	140700	1	002330	1	000037
2	144000	2	002400	2	000040
3	147100	3	002450	3	000041
4	152200	4	002520	4	000042
5	155300	5	002570	5	000043
6	160400	6	002640	6	000044
7	163500	7	002710	7	000045
8	166600	8	002760	8	000046
9	171700	9	003030	9	000047