

INTERNATIONAL
STANDARD

ISO/IEC
13490-2

First edition
1995-12-15

**Information technology — Volume and file
structure of read-only and write-once
compact disk media for information
interchange —**

Part 2:

Volume and file structure

*Technologies de l'information — Structure de volume et de fichier de
supports disque compact à lecture seule et à écriture unique pour
l'échange d'information —*

Partie 2: Structure de volume et de fichier



Reference number
ISO/IEC 13490-2:1995(E)

Contents

Section 1: General.....1

1 Scope1

2 Parts references.....1

3 Cross - reference.....1

3.1 Input1

3.2 Output.....2

4 Conformance2

4.1 Conformance of a medium2

4.2 Conformance of an information processing system2

5 Normative references2

6 Definitions.....3

6.1 file set.....3

6.2 group ID.....3

6.3 logical block.....3

6.4 user ID3

7 Notation3

8 Basic types3

8.1 16-Bit unsigned numerical values with most significant byte first.....3

8.2 16-Bit signed numerical values with most significant byte first.....3

8.3 16-Bit unsigned numerical values with both byte orders4

8.4 32-Bit unsigned numerical values with most significant byte first.....4

8.5 32-Bit signed numerical values with most significant byte first.....4

8.6 32-Bit unsigned numerical values with both byte orders4

8.7 Volume structure descriptor format.....4

8.7.1 Structure Type (BP 0).....4

8.7.2 Standard Identifier (BP 1).....4

8.7.3 Structure Version (BP 6).....5

8.7.4 Structure Data (BP 7)5

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 Printed in Switzerland

Section 2: Requirements for the medium for volume and file structure	6
9 Volume structure	6
9.1 Arrangement of information on a volume.....	6
9.1.1 Sectors	6
9.1.2 Track.....	6
9.1.3 Session	7
9.1.4 Volume space	7
9.1.5 Unallocated space of a volume.....	7
9.1.6 Volume recognition space.....	8
9.1.7 Volume recognition sequence	8
9.2 Volume set	8
9.3 Volume structure descriptors.....	8
9.3.1 Recording of volume structure descriptors.....	9
9.4 Volume Descriptor Set.....	9
9.4.1 Recording of Volume Descriptor Sets	9
9.4.2 Prevailing Volume Descriptor Set.....	10
9.5 Volume space management.....	10
9.5.1 Volume Space Table	10
9.5.2 Recording of Volume Space Tables.....	10
9.5.3 Identification of Volume Space Tables.....	10
9.5.4 Volume Space Tables Location Directory.....	10
9.6 Transactions	10
9.6.1 Identification of a transaction	11
9.6.2 End Transaction Descriptor	11
9.6.3 Prevailing End Transaction Descriptor	11
9.6.4 End Transaction Track	11
9.6.5 End Transaction Descriptor recording rule	11
10 Volume data structures.....	12
10.1 Primary Volume Descriptor.....	12
10.1.1 Structure Type (BP 0).....	12
10.1.2 Standard Identifier (BP 1).....	12
10.1.3 Structure Version (BP 6)	12
10.1.4 Reserved (BP 7).....	12
10.1.5 Descriptor Character Set (BP 8).....	12
10.1.6 Implementation Identifier (BP 72).....	13
10.1.7 Volume Identifier (BP 104)	13
10.1.8 Volume Set Identifier (BP 136).....	13
10.1.9 Volume Set Size (BP 264)	13
10.1.10 Volume Sequence Number (BP 268).....	13
10.1.11 Logical Block Size (BP 272).....	13
10.1.12 Control Flags (BP 280).....	13
10.1.13 End Transaction Track (BP 284)	13
10.1.14 Prevailing End Transaction Descriptor Location (BP 288).....	13
10.1.15 End Transaction Descriptor Recording Rule (BP 296).....	13
10.1.16 Maximum Interchange Level (BP 304).....	14
10.1.17 Maximum Character Set List (BP 308)	14
10.1.18 Volume Set Creation Date and Time (BP 312)	14
10.1.19 Descriptor Recording Date and Time (BP 324)	14

10.1.20 Application Use (BP 336)	15
10.1.21 Reserved (BP 848).....	15
10.2 Supplementary Volume Descriptor	15
10.2.1 Structure Type (BP 0).....	15
10.2.2 Standard Identifier (BP 1).....	15
10.2.3 Structure Version (BP 6).....	15
10.2.4 Reserved (BP 7)	15
10.2.5 Descriptor Character Set (BP 8)	15
10.2.6 Volume Identifier (BP 72).....	15
10.2.7 Volume Set Identifier (BP 104)	15
10.2.8 Supplementary Volume Descriptor Sequence Number (BP 232)	16
10.2.9 Control Flags (BP 236)	16
10.2.10 Descriptor Recording Date and Time (BP 240).....	16
10.2.11 Application Use (BP 252)	16
10.2.12 Reserved (BP 764).....	16
10.3 Volume Partition Descriptor	16
10.3.1 Structure Type (BP 0).....	17
10.3.2 Standard Identifier (BP 1).....	17
10.3.3 Structure Version (BP 6).....	17
10.3.4 Reserved (BP 7)	17
10.3.5 Descriptor Character Set (BP 8)	17
10.3.6 Implementation Identifier (BP 72).....	17
10.3.7 Volume Partition Identifier (BP 104).....	17
10.3.8 Volume Partition Location (BP 136).....	17
10.3.9 Volume Partition Size (BP 144)	17
10.3.10 Implementation Use (BP 152).....	17
10.4 End Transaction Descriptor.....	17
10.4.1 Structure Type (BP 0).....	18
10.4.2 Standard Identifier (BP 1).....	18
10.4.3 Structure Version (BP 6).....	18
10.4.4 End Transaction Flags (BP 7).....	18
10.4.5 Reserved (BP 8)	19
10.4.6 End Transaction Descriptor Location (BP 72)	19
10.4.7 Prevailing Volume Descriptor Set Location (BP 80).....	19
10.4.8 Prevailing File System Descriptor Set Location (BP 88)	19
10.4.9 Previous Prevailing File System Descriptor Set Location (BP 96)	19
10.4.10 Previous End Transaction Descriptor Location (BP 104)	19
10.4.11 End Transaction Track (BP 112).....	20
10.4.12 Last Volume of Volume Set (BP 116)	20
10.4.13 Transaction Number (BP 120)	20
10.4.14 Descriptor Recording Date and Time (BP 128).....	20
10.4.15 Number of File Set Descriptors (BP 140).....	20
10.4.16 Volume Space Tables Information (BP 144).....	20
10.4.17 Path Tables Information (BP 400)	20
10.4.18 Reserved (BP 656).....	20
10.5 Terminating Descriptor	20
10.5.1 Structure Type (BP 0).....	21
10.5.2 Standard Identifier (BP 1).....	21
10.5.3 Structure Version (BP 6).....	21
10.5.4 Control Flags (BP 7).....	21
10.5.5 Reserved (BP 8)	21
10.6 Track Specification Record.....	21
10.6.1 Session Number (RBP 0).....	22

10.6.2	Track Number (RBP 4).....	22
10.6.3	Track Type (RBP 8).....	22
10.6.4	Track Contents (RBP 10).....	24
10.6.5	Track Flags (RBP 11).....	24
10.6.6	Packet Size (RBP 12).....	24
10.6.7	Start Location of Track (RBP 20).....	24
10.6.8	End Location of Track (RBP 28).....	24
10.6.9	Last Written Sector (RBP 36).....	25
11	File set structure	25
11.1	File set	25
11.2	File System Descriptor Set	25
11.2.1	Recording of File System Descriptor Sets.....	25
11.2.2	Prevailing File System Descriptor Set	25
12	File set data structures	26
12.1	File Set Descriptor	26
12.1.1	Structure Type (BP 0).....	26
12.1.2	Standard Identifier (BP 1).....	26
12.1.3	Structure Version (BP 6)	26
12.1.4	File Structure Version (BP 7).....	27
12.1.5	Descriptor Character Set (BP 8).....	27
12.1.6	File Set Character Set (BP 72)	27
12.1.7	File Set Identifier (BP 136)	27
12.1.8	File Set Descriptor Sequence Number (BP 168).....	27
12.1.9	Control Flags (BP 172).....	27
12.1.10	Interchange Level (BP 176)	27
12.1.11	Maximum Interchange Level (BP 180).....	27
12.1.12	Maximum Character Set List (BP 184)	27
12.1.13	Domain Identifier (BP 188).....	27
12.1.14	File Set Creation Date and Time (BP 220).....	27
12.1.15	File Set Expiration Date and Time (BP 232)	28
12.1.16	File Set Effective Date and Time (BP 244)	28
12.1.17	Application Identifier (BP 256).....	28
12.1.18	Publisher Identifier (BP 386)	28
12.1.19	Data Preparer Identifier (BP 516).....	28
12.1.20	Copyright File Identifier (BP 646)	28
12.1.21	Abstract File Identifier (BP 776).....	28
12.1.22	Bibliographic File Identifier (BP 906).....	28
12.1.23	Application Use (BP 1 036)	29
12.1.24	Reserved (BP 1 548).....	29
12.2	Implementation Use Descriptor	29
12.2.1	Structure Type (BP 0).....	29
12.2.2	Standard Identifier (BP 1).....	29
12.2.3	Structure Version (BP 6)	29
12.2.4	Reserved (BP 7).....	29
12.2.5	Implementation Identifier (BP 72).....	29
12.2.6	Implementation Use (BP 104)	29
13	Directory and file structures	29
13.1	Directory hierarchy	29
13.1.1	ISO 9660 directories	30

13.1.2 ISO/IEC 13490–2 directories	31
13.1.3 Directory hierarchy size restrictions	32
13.1.4 Depth of a directory hierarchy	32
13.2 Recording of directory files	32
13.2.1 Directory file length	33
13.3 Path Table	33
13.3.1 Order of Path Table Records	33
13.3.2 Recording of Path Tables	34
13.3.3 Identification of Path Tables	34
13.3.4 Path Tables Location Directory	34
13.4 Pathname	34
13.4.1 Resolved pathname	35
13.5 Files	35
13.5.1 File sections	35
13.5.2 Data space of a file	37
13.6 Record structure	37
13.7 File identification	38
13.7.1 File identifier	38
13.7.2 File version number	38
13.8 Associated file	38
13.9 Alias File	38
14 Extended attributes	38
14.1 Recording of extended attributes for files and directories	39
14.1.1 Recording of additional extended attributes for files and directories	39
14.2 Recording of extended attributes for a Primary Volume Descriptor or a Supplementary Volume Descriptor or a File Set Descriptor	40
14.2.1 Recording of additional extended attributes for a Primary Volume Descriptor or a Supplementary Volume Descriptor or a File Set Descriptor	40
14.3 Extended attributes specified by this part of ISO/IEC 13490	41
15 Directory and file data structures	41
15.1 Directory Record	41
15.1.1 Length of Directory Record (=L_DR) (RBP 0)	42
15.1.2 Location of File Section (RBP 2)	42
15.1.3 Data Length (RBP 10)	42
15.1.4 Recording Date and Time (RBP 18)	42
15.1.5 File Flags (RBP 25)	42
15.1.6 File Unit Size (RBP 26)	43
15.1.7 Interleave Gap Size (RBP 27)	43
15.1.8 Volume Sequence Number (RBP 28)	43
15.1.9 Length of File Identifier (=L_FI) (RBP 32)	43
15.1.10 File Identifier (RBP 33)	43
15.1.11 Extended Attribute Area (RBP [L_FI+33])	44
15.1.12 Padding (RBP [L_XAA+L_FI+33])	44
15.1.13 File Version Number (RBP [*+L_XAA+L_FI+33])	44
15.2 Path Table Record	44
15.2.1 Length of Path Table Record (=L_PTR) (RBP 0)	45

15.2.2 Location of Directory (RBP 2).....	45
15.2.3 Data Length (RBP 10).....	45
15.2.4 Recording Date and Time (RBP 18).....	45
15.2.5 File Flags (RBP 25).....	45
15.2.6 Reserved (RBP 26).....	45
15.2.7 Parent Directory Number (RBP 28).....	45
15.2.8 Length of File Identifier (=L_FI) (RBP 32).....	45
15.2.9 File Identifier (RBP 33).....	46
15.2.10 Extended Attribute Area (RBP [L_FI+33]).....	46
15.2.11 Padding (RBP [L_XAA+L_FI+33]).....	46
15.3 Extended Attributes.....	46
15.3.1 Extended Attribute format.....	46
15.3.2 “CS” Extended Attribute.....	47
15.3.3 “PD” Extended attribute.....	49
15.3.4 “PM” Extended Attribute.....	50
15.3.5 “RF” Extended Attribute.....	51
15.3.6 “TF” Extended Attribute.....	53
15.3.7 “TI” Extended Attribute.....	54
15.3.8 “FC” Extended Attribute.....	55
15.3.9 “CE” Extended Attribute.....	56
15.3.10 “MF” Extended Attribute.....	58
15.3.11 “UX” Extended Attribute.....	59
15.3.12 “XR” Extended Attribute.....	61
15.3.13 “SU” Extended Attribute.....	63
15.3.14 “AU” Extended Attribute.....	64
15.4 Path Component.....	65
15.4.1 Component Type (RBP 0).....	66
15.4.2 Length of Component Identifier (= L_CI) (RBP 1).....	66
15.4.3 Component File Version Number (RBP 2).....	66
15.4.4 Component Identifier (RBP 4).....	66
15.5 File Section Record.....	66
15.5.1 Volume Sequence Number (RBP 0).....	67
15.5.2 Location of Extent (RBP 4).....	67
15.5.3 Data Length (RBP 12).....	67
16 Levels of medium interchange.....	67
16.1 Level 1.....	67
16.2 Level 2.....	68
16.3 Level 3.....	69
16.4 Level 4.....	69
Section 3: Requirements for systems for volume and file structure.....	70
17 Requirements for the description of systems.....	70
18 Requirements for an originating system.....	70
18.1 General.....	70
18.2 Mandatory access by user.....	70
18.2.1 Files.....	70
18.2.2 File set.....	70
18.2.3 Descriptors.....	70

18.3 Optional access by user.....	71
18.3.1 Descriptors.....	71
18.3.2 Records.....	73
18.3.3 File types.....	73
18.3.4 Permissions.....	73
18.4 Restrictions.....	73
18.4.1 Multivolume volume sets.....	73
18.4.2 Record length.....	73
18.4.3 File Times.....	73
18.4.4 Information Times.....	73
18.4.5 Alternate Permissions.....	73
18.4.6 Extended Attributes.....	74
19 Requirements for a receiving system.....	74
19.1 General.....	74
19.2 Files.....	74
19.2.1 File types.....	74
19.2.2 Permissions.....	74
19.3 Mandatory access by user.....	74
19.3.1 Descriptors.....	74
19.4 Restrictions.....	75
19.4.1 Record length.....	75
19.4.2 File Times.....	75
19.4.3 Information Times.....	75
19.4.4 Alternate Permissions.....	75
Annexes	77
A – Restrictions on a standard for recording.....	77
B – Methods of interchange.....	79
C – CD-WO disk format and system requirements.....	83

Foreword

ISO (the International Organisation for Standardisation) and IEC (the International Electrotechnical Commission) together form the specialised system for world-wide standardisation. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organisation to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organisations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75% of the national bodies casting a vote.

International Standard ISO/IEC 13490-2 was prepared by the European Association for Standardizing Information and Communication Systems, ECMA, (as ECMA-168) and was adopted, under a special “fast-track procedure” by joint technical committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

ISO/IEC 13490 consists of the following parts, under the general title *Information technology – Volume and file structure of read-only and write-once compact disk media for information interchange*

- *Part 1: General*
- *Part 2: Volume and File Structure*

Annex A forms an integral part of this part of ISO/IEC 13490. Annexes B and C are for information only.

Introduction

ISO/IEC 13490 can be used for both CD-ROM and CD-WO media for interchanging files. ISO/IEC 13490 is an enhancement of ISO 9660 for CD-ROM applications that has eliminated several restrictions and performance problems of ISO 9660.

ISO/IEC 13346 and ISO/IEC 13490 follow the same volume and file structure framework. ISO/IEC 13490 has common definitions with ISO/IEC 13346 regarding volume and boot block recognition, file attributes, registration procedures and record structure.

ISO/IEC 13490 is published in two parts. Part 1 - General - specifies references, definitions, notations and basic structures used in the other part. Part 2 - Volume and File Structure - specifies how to record various volume-related entities such as volumes and volume sets, and how to record and interpret files, both file data and file attributes, and file hierarchies within a volume set.

Information technology - Volume and file structure of read-only and write-once compact disk media for information interchange

Part 2:

Volume and file structure

Section 1: General

1 Scope

ISO/IEC 13490 specifies a format and associated system requirements for volume and boot block recognition, volume structure, file structure and record structure for the interchange of information between users of information processing systems using CD-WO (a write-once compact disk medium), hybrid CD-WO (a write-once compact disk with a read-only area) and CD-ROM disks.

NOTE 1 — CD-WO is an evolution of CD-ROM technology which allows the recording of information on a write-once compact disk medium.

The volume and boot block recognition is specified in ISO/IEC 13346-2 The record structure is specified in ISO/IEC 13346-5.

NOTE 2 — A volume set may be recorded that is in conformance with both ISO 9660 and ISO/IEC 13490. ISO/IEC 13490 is an enhancement of ISO 9660. ISO/IEC 13490 allows greater information interchange using CD-ROM. In addition, it supports incremental recording and updating of information stored on a CD-WO disk. Under certain restrictions (see 2/B.2.1), all of the files may be read by both a receiving system conforming to ISO 9660 and by a receiving system conforming to ISO/IEC 13490.

This part of ISO/IEC 13490 specifies a format and associated system requirements for volume and file structure by specifying:

- the attributes of a volume and the descriptors recorded on it;
- the relationship among volumes of a volume set;
- the attributes of a partition of a volume;
- the placement of files;
- the attributes of the files;
- the relationship among files of a file set;
- the relationship among file sets of a volume set;
- levels of medium interchange;
- requirements for the processes which are provided within information processing systems, to enable information to be interchanged between different systems; for this purpose it specifies the functions to be provided within systems which are intended to originate or receive media which conform to this part of ISO/IEC 13490.

2 Parts references

The first digit of a reference in ISO/IEC 13490 identifies the part. If the digit is preceded by “R”, the reference is to a part and clause of ISO/IEC 13346. For example, 2/5 refers to clause 5 in ISO/IEC 13490-2 and R2/5 refers to clause 5 in ISO/IEC 13346-2. If the reference is preceded by “figure”, the reference is to a figure. For example, figure 2/5 refers to figure 5 in ISO/IEC 13490-2. If the reference is preceded by “table”, the reference is to a table. For example, table 2/5 refers to table 5 in ISO/IEC 13490-2.

3 Cross - reference

This clause specifies the interface of this part of ISO/IEC 13490 to other standards or parts.

3.1 Input

This part of ISO/IEC 13490 requires the specification of the following by another standard or part:

- A standard for recording (see 1/5.13).
- A volume set of one or more volumes (see 2/9.2).
- For the purposes of ISO/IEC 13346-2, a volume recognition sequence (see R2/8.3.1) shall be recorded as specified in 2/9.1.7.
- For the purposes of ISO/IEC 13346-2, the volume recognition space (see R2/8.2) shall be as specified in 2/9.1.6.
- For the purposes of ISO/IEC 13346-2, the initial sector (see R2/3.1) of the volume shall be sector number 0 of the volume as specified in 2/9.1.1.1.

3.2 Output

This part of ISO/IEC 13490 specifies the following which may be used by other standards or parts:

- A volume space for a volume (see 2/9.1.4).
- A volume set of one or more volumes (see 2/9.2).
- An indication that a volume may have been recorded according to this part of ISO/IEC 13490 (see 2/9.1.7)
- Volume partitions (see 2/9.1.4.3).
- Sessions (see 2/9.1.3).
- Logical blocks of a fixed size for a volume set (see 2/9.1.4.1).
- The size of a logical block.
- Attributes of a volume.
- Attributes of a volume partition.
- Data space of a file (see 2/13.5.2).
- Attributes of a file.
- Attributes of a directory.
- Attributes of a directory hierarchy.

4 Conformance

4.1 Conformance of a medium

A medium shall be in conformance with ISO/IEC 13490 when it conforms to a standard for recording (see 1/5.13) and all information recorded on it conforms to the specifications of ISO/IEC 13490, ISO/IEC 13346-2 and ISO/IEC 13346-5, or to ISO/IEC 13490 and ISO/IEC 13346-2. A statement of conformance shall identify the parts of ISO/IEC 13346, and the levels of medium interchange (see R2/10 and 2/16) to which the contents of the medium conform

4.2 Conformance of an information processing system

An information processing system shall be in conformance with ISO/IEC 13490 if it meets the requirements specified in ISO/IEC 13490, ISO/IEC 13346-2 and ISO/IEC 13346-5, or in ISO/IEC 13490 and ISO/IEC 13346-2 either for an originating system (see R2/12, 2/18 and R5/11) or for a receiving system (see R2/13, 2/19 and R5/12) or for both types of system. A statement of conformance shall identify the parts of ISO/IEC 13346 and the levels of the requirements for the parts of ISO/IEC 13346 and ISO/IEC 13490 which can be met by the system

5 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 13490. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 13490 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/IEC 2022:1994, *Information technology — Character code structure and extension techniques*.

ISO/IEC 6429:1992, *Information technology — Control functions for coded character sets.*

ISO 9660:1988, *Information processing — Volume and file structure of CD-ROM for information interchange.*

ISO/IEC 9945-1:1990, *Information technology — Portable Operating System Interface (POSIX) — Part 1: System Application Program Interface (API) [C Language].*

ISO/IEC 10149:1995, *Information technology — Data interchange on read-only 120 mm optical data disks (CD-ROM).*

ISO/IEC 10646-1:1993, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — Part 1: Architecture and Basic Multilingual Plane.*

ISO/IEC 13346-2:1995, *Information technology — Volume and file structure of write-once and rewritable media using non-sequential recording for information interchange — Part 2: Volume and boot block recognition.*

ISO/IEC 13346-4:1995, *Information technology — Volume and file structure of write-once and rewritable media using non-sequential recording for information interchange — Part 4: File structure.*

ISO/IEC 13346-5:1995, *Information technology — Volume and file structure of write-once and rewritable media using non-sequential recording for information interchange — Part 5: Record Structure*

ISO/IEC 13490-1:1995, *Information technology – Volume and file structure of read-only and write-once compact disk media for information interchange — Part 1: General.*

ISO/IEC 13800¹⁾, *Information technology – Procedure for the registration of identifiers and attributes for volume and file structure.*

IEC 908:1987, *Compact disc digital audio system.*

¹⁾ To be published