
International Standard



1001

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Information processing — File structure and labelling of magnetic tapes for information interchange

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 1001 was prepared by Technical Committee ISO/TC 97, *Information processing systems*.

This second edition cancels and replaces the first edition (ISO 1001-1979), of which it constitutes a technical revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Information processing — File structure and labelling of magnetic tapes for information interchange

1 Scope and field of application

This International Standard specifies the file structure and the labelling of magnetic tapes for the interchange of information between users of information processing systems.

This International Standard also specifies

- volume and file structure;
- basic characteristics of the blocks containing the records constituting the file;
- recorded labels for identifying files, file sections and volumes of magnetic tapes;
- four nested levels of interchange.

Furthermore, this International Standard specifies requirements for the processes which are provided within information processing systems, to enable information to be interchanged between different systems, utilizing recorded magnetic tape as the medium of interchange. For this purpose it specifies the functions to be provided within systems which are intended to originate or receive magnetic tape volumes which conform to this International Standard.

2 Conformance

2.1 Conformance of a magnetic tape volume set

A magnetic tape volume set conforms to this International Standard when all information recorded on it conforms to the specifications of this International Standard. A statement of conformance shall identify the lowest level of interchange to which the contents of the magnetic tapes conform.

A prerequisite to such conformance is conformance of each volume of the volume set to the same International Standard for information interchange on magnetic tapes.

2.2 Conformance of an information processing system

An information processing system conforms to this International Standard if it meets all the requirements specified in this International Standard either for an originating system, or for a receiving system, or for both types of system. A statement of conformance shall identify which of these sets of requirements can be met by the system.

3 References

ISO 646, *Information processing — ISO 7-bit coded character set for information interchange*.

ISO 962, *Information processing — Implementation of the 7-bit coded character set and its 7-bit and 8-bit extensions on 9-track, 12,7 mm (0.5 in) magnetic tape*.

ISO 1862, *Information processing — 9-track, 12,7 mm (0.5 in) wide magnetic tape for information interchange recorded at 8 rpm (200 rpi)*.

ISO 1863, *Information processing — 9-track, 12,7 mm (0.5 in) wide magnetic tape for information interchange recorded at 32 rpm (800 rpi)*.

ISO 1864, *Information processing — Unrecorded 12,7 mm (0.5 in) wide magnetic tape for information interchange — 35 fpm (800 fpi) NRZ1, 126 fpm (3 200 fpi) phase encoded and 356 fpm (9 042 fpi), NRZ1*.

ISO 2022, *Information processing — ISO 7-bit and 8-bit coded character sets — Code extension techniques*.

ISO 3788, *Information processing — 9-track, 12,7 mm (0.5 in) wide magnetic tape for information interchange recorded at 63 rpm (1 600 rpi), phase-encoded*.

ISO 4873, *Information processing — 8-bit coded character set for information interchange*.

ISO 5652, *Information processing — 9-track, 12,7 mm (0.5 in) wide magnetic tape for information interchange — Format and recording, using group coding at 246 cpm (6 250 rpi)*.

4 Definitions

For the purpose of this International Standard, the following definitions apply.

4.1 application program : A program that processes the contents of records belonging to a file, and may also process selected attribute data relating to the file or to the volume(s) on which it is recorded.

NOTE — An application program is a specific class of user as defined in this International Standard.

4.2 block : A group of bytes recorded consecutively in accordance with the relevant International Standard for information interchange.

NOTE — The minimum and maximum lengths of a block are specified in the relevant International Standard for information interchange.

4.3 blocked : An attribute of records and record segments that indicates that they may begin at a byte that is not the first byte of a block.

4.4 byte : A string of eight binary digits operated upon as a unit.

4.5 file : A named collection of information consisting of zero or more records.

4.6 file section : That part of a file that is recorded on any one volume.

4.7 file set : A collection of one or more files recorded consecutively on a set of volumes.

4.8 fixed-length record : A record contained in a file in which all records must have the same length.

4.9 implementation : A set of processes within an information processing system which enable that system to behave as an originating system, or as a receiving system, or as both types of system.

4.10 installation : A person or other entity which controls the use of one or more implementations which process and interchange magnetic tapes.

NOTE — An installation is a specific class of user as defined in this International Standard.

4.11 label : A record that identifies and characterizes a volume, or a file section on a volume.

4.12 originating system : An information processing system which can record a file set on a volume set for the purpose of data interchange with another system.

4.13 originator : A person who is responsible for issuing commands to an originating system.

4.14 receiving system : An information processing system which can read a file set from a volume set which has been recorded by another system for the purpose of data interchange.

4.15 recipient : A person who is responsible for issuing commands to a receiving system.

4.16 record : Related data treated as a unit of information.

4.17 segmented record : A record contained in a file which is assigned to contain records that may have different lengths and that may be recorded entirely in one block or over more than one block.

4.18 International Standard for information interchange : A standard that specifies the recording method and the track format of a magnetic tape (for example ISO 1863).

4.19 Tape Mark : A control block used as a delimiter.

NOTE — The structure of Tape Marks is specified by the relevant International Standards for information interchange.

4.20 user : A person or other entity that causes the invocation of the services provided by an implementation.

4.21 variable-length record : A record contained in a file in which the records may have different lengths.

4.22 volume : A dismountable reel of magnetic tape.

4.23 volume set : A collection of one or more volumes, on which a file set is recorded.

5 Notation

The following notation is used in this International Standard :

BP :	Byte position within the label
L :	Length of the field in number of byte positions
a-character(s) :	Any of the allowed characters (see 8.1)
Digit(s) :	Any digit from ZERO to NINE.

With the exception of SPACE, a group of capital letters in the content column of a table specifying label contents indicates that these characters shall appear in the order given and in the corresponding byte positions of the field specified, for example VOL in BP 1 to 3 of the Volume Header Labels. In the tables and throughout this International Standard, SPACE signifies the character coded in position 2/0 of ISO 646.

6 Arrangement of labels and files

6.1 Arrangement of data on a volume

A volume shall be recorded with a sequence of blocks and Tape Marks. The sequence shall commence with a block, and shall terminate within the usable recording area.

6.2 Arrangement of label groups

6.2.1 Labels

A label shall be a record that shall have a length of 80 bytes. Each label shall be recorded within the first or only 80 byte positions of a block. If the block contains any additional bytes, they shall be recorded with any desired bit combinations.