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INTERNATIONAL STANDARD

ISO/IEC 14251

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Information technology — Data interchange on 12,7 mm 36-track magnetic tape cartridges

Technologies de l'information — Échange de données sur cartouches de bande magnétique de 12,7 mm, *36 pistes*

Reference number
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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, 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 14251 was prepared by the European Computer Manufacturers Association (as Standard ECMA-196) 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.

Annexes A to G form an integral part of this International Standard. Annexes H to M are for information only.

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Introduction

The following International Standards specify data interchange on 12,7 mm wide magnetic tape cartridges:

ISO/IEC 9661: 1994, *Information technology - Data interchange on 12,7 mm wide magnetic tape cartridges - 18 tracks, 1 491 bytes per millimetre*

ISO/IEC 11559: 1993, *Information technology - Data interchange on 12,7 mm wide 18- track magnetic tape cartridges - Extended format*

ISO/IEC 13421: 1993, *Information technology - Data interchange on 12,7 mm, 48-track magnetic tape cartridges - DLT 1 format*

ISO/IEC 13962: 1995, *Information technology - Data interchange on 12,7 mm, 112-track magnetic tape cartridges - DLT 2 format*

This International Standard is related to further developments of cartridges containing 12,7 mm magnetic tape. It incorporates most of the requirements of ISO/IEC 11559, together with extensions and modifications which specify the additional features that allow higher capacities to be achieved.

Two types of cartridge are defined within this International Standard. For one of the types, the requirements for the case and the tape are identical with those in ISO/IEC 11559. The second type conforms to different requirements which are defined in this International Standard. This International Standard also specifies a recording method and format for use with either type.

It is not intended that this International Standard replaces ISO/IEC 11559. Existing cartridges which conform to ISO/IEC 11559 will continue to do so and will not conform to all the requirements of this International Standard. Drives which write and read according to this International Standard may have the ability to accept and read cartridges conforming to ISO/IEC 9661 or ISO/IEC 11559.

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Information technology - Data interchange on 12,7 mm 36-track magnetic tape cartridges

Section 1 - General

1 Scope

This International Standard specifies the physical and magnetic characteristics of 12,7 mm wide, 36-track magnetic tape cartridges to enable interchangeability of such cartridges. It also specifies the quality of the recorded signals, the format and the recording method, thus allowing, together with International Standard ISO 1001 or equivalent, full data interchange by means of such magnetic tape cartridges.

This International Standard specifies two types of cartridge which, for the purposes of this International Standard, are referred to as Cartridge System Tape (CST) and Extended Capacity Cartridge System Tape (ECCST), and contain tape of different thicknesses and lengths.

CST cartridges have a nominal uncompressed capacity of approximately 400 Mbytes.

ECCST cartridges have a nominal uncompressed capacity of approximately 800 Mbytes.

This International Standard specifies extensions and modifications to the recorded format that is described in International Standard ISO/IEC 11559.

These extensions and modifications

- increase the number of tracks recorded on the tape from 18 to 36. Actual recordings will be made 18 tracks at a time requiring two complete passes of the tape, one from the beginning of tape to the end of tape and the other from the end of tape to the beginning of tape;
- specify a different method of defining the ECC characters used to detect and correct errors when the data is read from the tape.

2 Conformance

2.1 Magnetic tape cartridge

A magnetic tape cartridge is in conformance with this International Standard if:

- the cartridge meets all the requirements of clauses 6 to 8 for either one of the two types of magnetic tape cartridge;
- the recording on the tape meets the requirements of clauses 9 to 13;
- for each recorded packet the algorithm used for processing the data therein, if Processed Data has been recorded, is defined and the identification is included in Byte 13 of the Packet ID of this packet (see 11.2). This identification shall conform to ISO/IEC 11576.

2.2 Generating system

A system generating a magnetic tape cartridge for interchange shall be entitled to claim conformance with this International Standard if all the recordings that it makes on a tape meet the mandatory requirements of this International Standard. A claim of conformance shall state which types of magnetic tape cartridges it is capable of recording, whether or not one, or more, registered algorithms are implemented and, if so, the registered identifiers of all implemented algorithms. It shall also state whether it is capable of generating the optional VOLID Mark information.

2.3 Receiving system

A system receiving a magnetic tape cartridge for interchange shall be entitled to claim conformance with this International Standard if it is able to handle any recording made on the tape according to this International Standard and specifies which of the two types of magnetic tape cartridges it is capable of reading. In particular it shall

- be able to retrieve data from individual packets within the extended blocks;
- be able to recognize that the data has been processed, to identify the algorithm(s) used, restore the data to its original form or to indicate to the host that it cannot do so;

A claim of conformance shall state whether or not one, or more, registered algorithm(s) is (are) implemented and, if so, the registered identifier(s) of all implemented algorithms. It shall also state whether it is capable of using the optional VOLID Mark information.

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3 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 646: 1991, *Information technology - ISO 7-bit coded character set for information interchange.*

ISO 683-13: 1986, *Heat-treatable steels, alloy steels and free-cutting steels - Part 13: Wrought stainless steels.*

ISO 1001: 1986, *Information processing - File structure and labelling of magnetic tapes for information interchange.*

ISO 1302: 1992, *Technical drawings - Method of indicating surface texture.*

ISO/IEC 11576:1994, *Information technology - Procedure for the registration of algorithms for the lossless compression of data.*