TECHNICAL REPORT

ISO/IEC TR 13818-5

Second edition
2005-10-15

Information technology — Generic coding of moving pictures and associated audio information —

Part 5: Software simulation

Technologies de l'information — Codage générique des images animées et des informations sonores associées —

Partie 5: Simulation de logiciel

Reference number
ISO/IEC TR 13818-5:2005(E)

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Published in Switzerland

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. 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.

In exceptional circumstances, the joint technical committee may propose the publication of a Technical Report of one of the following types:

— type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;

— type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;

— type 3, when the joint technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/IEC 13818-5, which is a Technical Report of type 3, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

This second edition cancels and replaces the first edition (ISO/IEC 13818-5:1997), which has been technically revised. It also incorporates the Amendments ISO/IEC TR 13818-5:1997/Amd.1:1999 and ISO/IEC TR 13818-5:1997/Amd.2:2005, and the Technical Corrigenda ISO/IEC TR 13818-5:1997/Amd.1:1999/Cor.1:2003 and ISO/IEC TR 13818-5:1997/Amd.1:1999/Cor.2:2004.

ISO/IEC 13818 consists of the following parts, under the general title *Information technology — Generic coding of moving pictures and associated audio information*:

— *Part 1: Systems*

— *Part 2: Video*

— *Part 3: Audio*

— *Part 4: Conformance testing*

— *Part 5: Software simulation* [Technical Report]

— *Part 6: Extensions for DSM-CC*

— *Part 7: Advanced Audio Coding (AAC)*

— *Part 9: Extension for real time interface for systems decoders*

— *Part 10: Conformance extensions for Digital Storage Media Command and Control (DSM-CC)*

— *Part 11: IPMP on MPEG-2 systems*

Introduction

This Part of ISO/IEC 13818 was developed in response to the growing need for a generic coding method of moving pictures and of associated sound for various applications such as digital storage media, television broadcasting and communication. The use of this specification means that motion video can be manipulated as a form of computer data and can be stored on various storage media, transmitted and received over existing and future networks and distributed on existing and future broadcasting channels.

The International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of patents.

The ISO and IEC take no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the ISO and IEC that he is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with the ISO and IEC. Information may be obtained from the companies listed in Annex B.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified in Annex B. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Information technology — Generic coding of moving pictures and associated audio information —

Part 5:
Software simulation

1 Scope

This Technical Report provides a C language software simulation of an encoder and decoder for Part 1 (Systems), Part 2 (Video), Part 3 (Audio), Part 7 (AAC) and Part 11 (IPMP) of ISO/IEC 13818.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 639 (all parts), *Code for the representation of names of languages*

ISO 8859-1, *Information processing - 8-bit single-byte coded graphic character sets - Part 1: Latin alphabet No. 1*

ISO/IEC 10918-1:1994, *Information technology - Digital compression and coding of continuous-tone still images: Requirements and guidelines* (See also ITU-T Rec. T.81.)

ISO/IEC 11172-1:1993, *Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s - Part 1: Systems*

ISO/IEC 11172-2:1993, *Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s - Part 2: Video*

ISO/IEC 11172-3:1993, *Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s - Part 3: Audio*

ISO/IEC 11172-4:1995, *Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s - Part 4: Compliance testing*

ISO/IEC 11172-5:1998, *Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s - Part 5: Software simulation*

ISO/IEC 11172-6, *Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s - Part 5: Specification for implementation of Inverse Discrete Cosine Transform*

ITU-T Rec. H.222.0 (2000) | ISO/IEC 13818-1:2000, *Information technology - Generic coding of moving pictures and associated audio information : Systems*

ITU-T Rec. H.262 (2000) | ISO/IEC 13818-2:2000, *Information technology - Generic coding of moving pictures and associated audio information : Video* (See also ITU-T Rec. H.262.)

ISO/IEC 13818-3:1998, *Information technology - Generic coding of moving pictures and associated audio information - Part 3: Audio*

ISO/IEC 13818-4:2004, *Information technology - Generic coding of moving pictures and associated audio information - Part 4: Conformance testing*

ISO/IEC 13818-7:2004, *Information technology – Generic coding of moving pictures and associated audio information - Part 7: Advanced Audio Coding (AAC)*

ISO/IEC 13818-11:2004, *Information technology – Generic coding of moving pictures and associated audio information – Part 11: IPMP on MPEG-2 systems*