INTERNATIONAL STANDARD

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Information technology — Multimedia content description interface —

Part 1: Systems

Technologies de l'information — Interface de description du contenu multimédia —

Partie 1: Systèmes

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

ISO/IEC 15938-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

ISO/IEC 15938 consists of the following parts, under the general title *Information technology — Multimedia content description interface*:

— *Part 1: Systems*

— *Part 2: Description definition language*

— *Part 3: Visual*

— *Part 4: Audio*

— *Part 5: Multimedia description schemes*

— *Part 6: Reference software*

— *Part 7: Conformance testing*

— *Part 8: Extraction and use of MPEG-7 descriptions*

Annexes A to C of this part of ISO/IEC 15938 are for information only.

Introduction

This standard, also known as "Multimedia Content Description Interface," provides a standardized set of technologies for describing multimedia content. The standard addresses a broad spectrum of multimedia applications and requirements by providing a metadata system for describing the features of multimedia content.

The following are specified in this standard:

- **Description Schemes (DS)** describe entities or relationships pertaining to multimedia content. Description Schemes specify the structure and semantics of their components, which may be Description Schemes, Descriptors, or datatypes.

- **Descriptors (D)** describe features, attributes, or groups of attributes of multimedia content.

- **Datatypes** are the basic reusable datatypes employed by Description Schemes and Descriptors.

- **Description Definition Language (DDL)** defines Description Schemes, Descriptors, and Datatypes by specifying their syntax, and allows their extension.

- **Systems tools** support delivery of descriptions, multiplexing of descriptions with multimedia content, synchronization, file format, and so forth.

This standard is subdivided into eight parts:

Part 1 – Systems: specifies the tools for preparing descriptions for efficient transport and storage, compressing descriptions, and allowing synchronization between content and descriptions.

Part 2 – Description definition language: specifies the language for defining the standard set of description tools (DSs, Ds, and datatypes) and for defining new description tools.

Part 3 – Visual: specifies the description tools pertaining to visual content.

Part 4 – Audio: specifies the description tools pertaining to audio content.

Part 5 – Multimedia description schemes: specifies the generic description tools pertaining to multimedia including audio and visual content.

Part 6 – Reference software: provides a software implementation of the standard.

Part 7 – Conformance testing: specifies the guidelines and procedures for testing conformance of implementations of the standard.

Part 8 – Extraction and use of MPEG-7 descriptions: provides guidelines and examples of the extraction and use of descriptions.

Information technology — Multimedia content description interface —

Part 1: Systems

1 Scope

This International Standard defines a Multimedia Content Description Interface, specifying a series of interfaces from system to application level to allow disparate systems to interchange information about multimedia content. It describes the architecture for systems, a language for extensions and specific applications, description tools in the audio and visual domains, as well as tools that are not specific to audio-visual domains.

This part of ISO/IEC 15938 specifies system level functionalities for the communication of multimedia content descriptions. ISO/IEC 15938-1 provides a specification which will:

— enable development of ISO/IEC 15938 receiving sub-systems, called ISO/IEC 15938 Terminal, or Terminal in short, to receive and assemble possibly partitioned and compressed multimedia content descriptions

— provide rules for the preparation of multimedia content descriptions consisting of the tools specified in Parts 3, 4 and 5 of ISO/IEC 15938 for efficient transport and storage.

The decoding process within the ISO/IEC 15938 Terminal is normative. The rules mentioned provide guidance for the preparation and encoding of multimedia content descriptions without leading to a unique encoded representation of such descriptions.

This part of the MPEG-7 Standard is intended to be implemented in conjunction with other parts of the standard. In particular, MPEG-7 Part 1: Systems assumes some knowledge of Part 2: Description Definition Language (DDL) in its normative syntactic definitions of Descriptors and Description Schemes, as well as in the processing of schema and descriptions. The methods for obtaining the descriptions to which the encoding techniques in this part refer are defined in Parts 3, 4, and 5 of ISO/IEC 15938.

MPEG-7 is an extensible standard. The standard method of extending the standard beyond the Description Schemes provided in the standard is to define new ones in the DDL, and to make those DSs as accessible as the instantiated descriptions. Further details are available in Part 2.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 15938. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO/IEC 15938 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau maintains a list of currently valid ITU-T Recommendations.

- ISO/IEC 10646-1:2000, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — Part 1: Architecture and Basic Multilingual Plane*

NOTE The UTF-8 encoding scheme is described in Annex D of ISO/IEC 10646-1:2000.

- XML, *Extensible Markup Language (XML) 1.0,* 6 October 2000 <http://www.w3.org/TR/2000/REC-xml-20001006>
- *XML Schema, W3C Recommendation*, 2 May 2001 <http://www.w3.org/XML/Schema>
- *XML Schema Part 0: Primer,* W3C Recommendation, 2 May 2001 <http://www.w3.org/TR/xmlschema-0/>
- *XML Schema Part 1: Structures*, W3C Recommendation, 2 May 2001 <http://www.w3.org/TR/xmlschema-1/>
- *XML Schema Part 2: Datatypes*, W3C Recommendation, 2 May 2001 <http://www.w3.org/TR/xmlschema-2/>
- XPath, *XML Path Language,* W3C Recommendation, 16 November 1999 <http://www.w3.org/TR/1999/REC-xpath-19991116>
- *Namespaces in XML*, W3C Recommendation, 14 January 1999 <http://www.w3.org/TR/1999/REC-xml-names-19990114>

NOTE These documents are maintained by the W3C (http://www.w3.org).

- RFC 2396, *Uniform Resource Identifiers (URI): Generic Syntax.*
- *IEEE Standard for Binary Floating-Point Arithmetic*, Std 754-1985 Reaffirmed1990, http://standards.ieee.org/reading/ieee/std_public/description/busarch/754-1985_desc.html