INTERNATIONAL STANDARD

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Information technology — Multimedia content description interface —

Part 7: Conformance testing

Technologies de l'information — Description de l'interface du contenu multimédia —

Partie 7: Essais de conformité

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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 member bodies casting a vote.

ISO/IEC 15938-7 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of auto, 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*

Introduction

ISO/IEC 15938, also known as "Multimedia Content Description Interface," provides a standardized set of technologies for describing multimedia content. It 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 ISO/IEC 15938:

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

ISO/IEC 15938 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 ISO/IEC 15938.

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

Part 8 — Extraction and Use: provides guidelines and examples of the extraction and use of descriptions.

This part of ISO/IEC 15938 specifies the conformance part of the ISO/IEC 15938 standard by specifying the guidelines and procedures for testing conformance of implementations of the standard.

Information technology — Multimedia content description interface —

Part 7: Conformance testing

1 Scope

1.1 Organization of the document

ISO/IEC 15938 specifies a metadata system for describing multimedia content. This part of ISO/IEC 15938 specifies how tests can be designed to verify whether descriptions and description consuming terminals meet the specifications of parts 1, 2, 3, 4 and 5 of ISO/IEC 15938. In this part of ISO/IEC 15938, the creation or extraction of descriptions from multimedia content is not addressed specifically. A system producing descriptions may be said to be an ISO/IEC 15938 compatible description production system if it produces descriptions (binary or textual) that conform to the specifications of parts 1, 2, 3, 4 and 5 of ISO/IEC 15938.

The characteristics of descriptions and the terminals consuming descriptions are defined for parts 1, 2, 3, 4 and 5 of ISO/IEC 15938 as follows.

— **Descriptions**: the characteristics of a specific description are defined according to syntax and semantics of elements from ISO/IEC 15938 that are used in the description.

— **Terminals**: the characteristics of a terminal consuming a description are defined according to the required description decoding process for the elements used in the description. An example of a description decoding property is the arithmetic accuracy in which the value of element are represented. The capabilities of a description consuming terminal are determined by the domain of descriptions and elements that the terminal is capable of decoding. A description can be decoded by a terminal if the elements of the description are within the subset of ISO/IEC 15938 specified for a given definition of decoder capabilities.

In this document, procedures are described for testing conformance of descriptions and terminals according to the specifications of parts 1, 2, 3, 4 and 5 of ISO/IEC 15938. Given a set of claimed characteristics (descriptions and terminals), the requirements for conformance are fully determined by parts 1, 2, 3, 4 and 5 of ISO/IEC 15938. This part of ISO/IEC 15938 summarizes the requirements and defines how conformance can be tested. Guidelines are given on constructing tests to verify conformance of descriptions and terminals. This document provides additional guidelines on how to construct test suites for checking conformance of terminals. In addition, some test descriptions are provided.

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 8601, *Data elements and interchange formats — Information interchange — Representation of dates and times*

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

ISO 3166-1, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes*

ISO 3166-2, *Codes for the representation of names of countries and their subdivisions — Part 2: Country subdivision code*

NOTE The current list of valid ISO 3166-1 country and ISO 3166-2 region codes is maintained by the official maintenance authority Deutsches Institut für Normung. Information on the current list of valid region and country codes can be found at http://www.din.de/gremien/nas/nabd/iso3166ma/index.html.

ISO 4217, *Codes for the representation of currencies and funds*

NOTE The current list of valid ISO 4217 currency codes is maintained by the official maintenance authority British Standards Institution (http://www.bsi-global.com/iso4217currency).

XML, Extensible Markup Language (XML) 1.0, October 2000

XML Schema, W3C Recommendation, 2 May 2001

XML Schema Part 0: Primer, W3C Recommendation, 2 May 2001

XML Schema Part 1: Structures, W3C Recommendation, 2 May 2001

XML Schema Part 2: Datatypes, W3C Recommendation, 2 May 200

xPath, XML Path Language, W3C Recommendation, 16 November 1999

NOTE These documents are maintained by the W3C (http://www.w3.org). The relevant documents can be obtained as follows:

Extensible Markup Language (XML) 1.0 (Second Edition), 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.

Canonical XML Version 1.0, W3C Recommendation 15 March 2001,
http://www.w3.org/TR/2001/REC-xml-c14n-20010315

RFC 2045 *Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies*

RFC 2046 *Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types*

RFC 2048, *Multipurpose Internet Mail Extensions (MIME) Part Four: Registration Procedures*

RFC 2045-CHARSETS, *Registered Character set codes of RFC2045*

RFC2046-MIMETYPES, *Registered Mimetypes of RFC2046*

NOTE The relevant lists can be obtained as follows:

MIMETYPES. The current list of registered mimetypes, as defined in RFC2046, RFC2048, is maintained by IANA (Internet Assigned Numbers Authority). It is available from ftp://ftp.isi.edu/in-notes/iana/assignments/media-types/media-types/

CHARSETS. The current list of registered character set codes, as defined in RFC2045 and RFC2048 is maintained by IANA (Internet Assigned Numbers Authority). It is available from ftp://ftp.isi.edu/in-notes/iana/assignments/character-sets.