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Information technology — Multimedia service platform technologies —

Part 4: Elementary services

Technologies de l'information — Technologies de la plate-forme de services multimédia —

Partie 4: Services élémentaires

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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.

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

ISO/IEC 23006-4 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 23006-4:2010), which has been technically revised.

ISO/IEC 23006 consists of the following parts, under the general title *Information technology — Multimedia service platform technologies*:

— *Part 1: Architecture*

— *Part 2: MPEG extensible middleware (MXM) API*

— *Part 3: Conformance and reference software*

— *Part 4: Elementary services*

— *Part 5: Service aggregation*

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Introduction

ISO/IEC 23006 is a suite of standards that has been developed for the purpose of enabling the easy design and implementation of media-handling value chains whose devices interoperate because they are all based on the same set of technologies accessible from the middleware.

ISO/IEC 23006 is referred as MPEG Extensible Middleware (MXM) in its first edition, and it specifies an architecture (Part 1), an API (Part 2), a reference software (Part 3) and a set of protocols which MXM Devices had to adhere (Part 4).

ISO/IEC 23006 is referred as Multimedia Service Platform Technologies (MSPT) in its second edition, and it conserves the architecture and design philosophy of the first edition, but stressing the Service Oriented Architecture character. It specifies also how to combine elementary services into aggregated services (Part 5).

This second edition has been specified to address the demand of service specification for an advanced IPTV terminal (AIT). The ISO/IEC 23006 suite of standards also aims at leveraging on advanced technologies to bring into IPTV services the buoyancy of new exciting initiatives – sometimes assembling millions of users in a fortnight – that pop up almost every day with new features such as open APIs and the possibility for third parties to provide applications to those APIs.

This enables the development of a global market of:

— MSPT applications that can run on MSPT devices, like Advanced IPTV Terminals (AITs), thanks to the existence of a standard MSPT application API

— MSPT devices executing MSPT applications thanks to the existence of a standard MSPT architecture

— MSPT engines thanks to the existence of standard MSPT architecture and standard APIs

— Innovative business models because of the ease to design and implement media-handling value chains whose devices interoperate because they are all based on the same set of technologies, especially MPEG technologies.

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Information technology — Multimedia service platform technologies —

Part 4: Elementary services

1 Scope

This part of ISO/IEC 23006 specifies a set of Elementary Services and protocols enabling distributed applications to exchange information related to content items and parts thereof, including all the necessary Operations on MPEG-related Entities: Content, Contract, Device, Event, License, Service and User. These operations are defined to be the following: Authenticate, Authorize, Check With, Create, Deliver, Describe, Identify, Install, Interact With, Negotiate, Package, Post, Present, Process, Request, Revoke, Search, Store, Transact, Uninstall and Verify. Elementary Services can be combined in well defined sequences to build Aggregated Services, both of them being called in general Multimedia Services. ISO/IEC 23006 (all parts) will be referred to as MPEG-M for short in the text. The Multimedia Services are provided by and consumed by Multimedia Devices in a MSPT ecosystem, an example of which is the Advanced IPTV Terminal.

2 Normative references

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

ISO/IEC 14496-13, *Information technology — Coding of audio-visual objects — Part 13: Intellectual Property Management and Protection (IPMP) extensions*

ISO/IEC 15938-1, *Information technology — Multimedia content description interface — Part 1: Systems*

ISO/IEC 15938-5, *Information technology — Multimedia content description interface — Part 5: Multimedia description schemes*

ISO/IEC 15938-12, *Information technology — Multimedia content description interface — Part 12: Query format*

ISO/IEC 21000-2, *Information technology — Multimedia framework (MPEG-21) — Part 2: Digital Item Declaration*

ISO/IEC 21000-3, *Information technology — Multimedia framework (MPEG-21) — Part 3: Digital Item Identification*

ISO/IEC 21000-4, *Information technology — Multimedia framework (MPEG-21) — Part 4: Intellectual Property Management and Protection Components*

ISO/IEC 21000-5, *Information technology — Multimedia framework (MPEG-21) — Part 5: Rights Expression Language*

ISO/IEC 21000-15, *Information technology — Multimedia framework (MPEG-21) — Part 15: Event Reporting*

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ISO/IEC 21000-17, *Information technology — Multimedia framework (MPEG-21) — Part 17: Fragment Identification of MPEG Resources*

ISO/IEC 21000-20, *Information technology — Multimedia framework (MPEG-21) — Part 20: Contract Expression Language*

ISO/IEC 23000-5, *Information technology — Multimedia application format (MPEG-A) — Part 5: Media streaming application format*

ISO/IEC 23001-2, *Information technology — MPEG systems technologies — Part 2: Fragment request units*

ISO/IEC 23001-3, *Information technology — MPEG systems technologies — Part 3: XML IPMP messages*

ISO/IEC 23005-2, *Information technology — Media context and control — Part 2: Control Information*

ISO/IEC 23005-3, *Information technology — Media context and control — Part 3: Sensory Information*

ISO/IEC 23006-1, *Information technology — Multimedia service platform technologies — Part 1: Architecture*

ISO/IEC 23006-2, *Information technology — Multimedia service platform technologies — Part 2: MPEG Extensible Middleware (MXM) API*

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W3C XPATH1, *XML Path Language (XPath) Version 1.0*, W3C Recommendation, 16 November 1999

W3C XSL, *XSL Transformations (XSLT) Version 2.0*, W3C Recommendation, 23 January 2007

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