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**Information technology — Multimedia  
application format (MPEG-A) —**

**Part 5:  
Media streaming application format**

*Technologies de l'information — Format pour application multimédia  
(MPEG-A) —*

*Partie 5: Format pour application de transmission multimédia en continu*

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## Contents

	Page
<b>Foreword .....</b>	<b>v</b>
<b>Introduction.....</b>	<b>vi</b>
<b>1 Scope.....</b>	<b>1</b>
<b>2 Normative references.....</b>	<b>1</b>
<b>3 Terms and definitions .....</b>	<b>2</b>
<b>4 Abbreviated terms .....</b>	<b>3</b>
<b>5 Namespace conventions .....</b>	<b>3</b>
<b>6 System overview .....</b>	<b>4</b>
<b>7 Information representation.....</b>	<b>6</b>
<b>7.1 Introduction.....</b>	<b>6</b>
<b>7.2 Digital Item .....</b>	<b>6</b>
<b>7.3 Metadata .....</b>	<b>6</b>
<b>7.4 Digital Item Signature.....</b>	<b>7</b>
<b>7.5 Identifiers .....</b>	<b>7</b>
<b>7.6 Resources .....</b>	<b>7</b>
<b>7.7 IPMP information .....</b>	<b>8</b>
<b>7.8 License .....</b>	<b>8</b>
<b>7.9 Key .....</b>	<b>8</b>
<b>7.10 IPMPX Messages .....</b>	<b>8</b>
<b>7.11 Device information .....</b>	<b>9</b>
<b>7.12 Event Reporting.....</b>	<b>9</b>
<b>7.13 Binary XML .....</b>	<b>9</b>
<b>8 Transport protocols .....</b>	<b>9</b>
<b>8.1 Introduction.....</b>	<b>9</b>
<b>8.2 Streaming protocols.....</b>	<b>9</b>
<b>8.3 File format .....</b>	<b>9</b>
<b>9 Device to Device Protocols .....</b>	<b>10</b>
<b>9.1 Access Protocols .....</b>	<b>10</b>
<b>9.2 Domain Management Protocols.....</b>	<b>10</b>
<b>10 Reference software .....</b>	<b>10</b>
<b>11 Conformance testing.....</b>	<b>10</b>
<b>Annex A (normative) Usage of DIDL in the Media Streaming Application Format .....</b>	<b>11</b>
<b>Annex B (informative) The Media Streaming DIDL profile schemas.....</b>	<b>17</b>
<b>Annex C (informative) The Media Streaming TV Anytime Profile schema.....</b>	<b>21</b>
<b>Annex D (normative) Usage of IPMP Components in the Media Streaming Application Format.....</b>	<b>22</b>
<b>Annex E (informative) Media Streaming IPMP Components schemas.....</b>	<b>31</b>
<b>Annex F (normative) Media Streaming Application Format file format.....</b>	<b>39</b>
<b>Annex G (informative) An Example of Media Streaming Application Format: IPTV .....</b>	<b>40</b>
<b>Annex H (informative) An Example of Media Streaming Application Format: Digital Broadcasting without return channel.....</b>	<b>51</b>
<b>Annex I (informative) An Example of Media Streaming Application Format: Streaming of interactive video, metadata, multimedia objects and presentation information .....</b>	<b>55</b>

<b>Annex J (informative) An Example of Media Streaming Application Format: IPTV Marketplace (IPTV-MP) .....</b>	<b>56</b>
<b>Bibliography .....</b>	<b>92</b>

## 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 23000-5 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 23000-5:2008), which has been technically revised.

ISO/IEC 23000 consists of the following parts, under the general title *Information technology — Multimedia application format (MPEG-A)*:

- *Part 1: Purpose for multimedia application formats* [Technical Report]
- *Part 2: MPEG music player application format*
- *Part 3: MPEG photo player application format*
- *Part 4: Musical slide show application format*
- *Part 5: Media streaming application format*
- *Part 6: Professional archival application format*
- *Part 7: Open access application format*
- *Part 8: Portable video application format*
- *Part 9: Digital Multimedia Broadcasting application format*
- *Part 10: Video surveillance application format*
- *Part 11: Stereoscopic video application format*
- *Part 12: Interactive music application format*

## Introduction

ISO/IEC 23000 adds to a sequence of International Standards that have been developed by JTC 1/SC 29. Parts of ISO/IEC 23000 are developed by selecting existing technologies from published JTC 1/SC 29/WG 11 International Standards and combining them into so-called “Multimedia Application Formats” or MAFs. In justified instances external standards or specifications may also be referenced.

ISO/IEC 23000 aims to serve clearly identified market needs by facilitating the swift development of innovative and standards-based multimedia applications and services. This application-driven process results in normative specifications of multimedia formats along with reference software implementation allowing interoperability at the application level.

This part of ISO/IEC 23000 is aimed at applications involving the distribution of governed media resources, metadata and related information streamed over a variety of delivery systems to Media Streaming Players, possibly members of a domain in which the content can be securely distributed once stored in a file. Typical examples of such applications are IPTV, Digital Broadcasting without a return channel and streaming of interactive video with embedded metadata and multimedia objects with presentation information.

# Information technology — Multimedia application format (MPEG-A) —

## Part 5: Media streaming application format

### 1 Scope

This part of ISO/IEC 23000 specifies a digital item structure, a file format, and references a set of protocols used in a media streaming environment for applications where governed audio and video information is streamed to an end-user device by means of existing protocols such as MPEG-2 Transport Stream or Real Time Protocol over User Datagram Protocols over Internet Protocol (RTP/UDP/IP), and provides informative implementation examples corresponding to specific applications.

**NOTE** This part of ISO/IEC 23000 offers a standardized solution for the streaming of audio-visual information, metadata, multimedia objects and related presentation information to facilitate simple and fully interoperable exchange across different devices and platforms. The Media Streaming Application Format allows conforming devices to access audio and video information that is governed or ungoverned, and reaches end-user devices using a variety of means.

The format of the media streaming content specified as part of this part of ISO/IEC 23000 relies on a number of MPEG technologies such as those found in ISO/IEC 21000-2, ISO/IEC 21000-3, ISO/IEC 21000-4, ISO/IEC 21000-5, ISO/IEC 21000-9 and ISO/IEC 21000-18, as well as on several MPEG-2/4 standards related to audio/video encoding and composition, as this MAF specifies "native" resources for some application scenarios. Some of the International Standards mentioned above are referenced in their entirety by this part of ISO/IEC 23000, whereas others are only used partially, and in a specific way.

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

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

ISO/IEC 21000-9:2005, *Information technology — Multimedia framework (MPEG-21) — Part 9: File Format*

ISO/IEC 21000-16:2005, *Information technology — Multimedia framework (MPEG-21) — Part 16: Binary Format*

ISO/IEC 23001-1:2006, *Information technology — MPEG systems technologies — Part 1: Binary MPEG format for XML*

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