
**Graphic technology — Extensible
metadata platform (XMP) specification —**

**Part 1:
Data model, serialization and core
properties**

*Technologie graphique — Spécification de la plate-forme de
métadonnées extensibles (XMP) —*

Partie 1: Modèle de données, mise en série et paramètres principaux



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

ISO 16684-1 was prepared by Adobe (as *XMP Specification Part 1, Data Model Serialization, and Core Properties*, July 2010) and was adopted, under a special “fast-track procedure”, by Technical Committee ISO/TC 130, *Graphic technology*, in parallel with its approval by the ISO member bodies.

ISO 16684 consists of the following parts, under the general title *Graphic technology — Extensible metadata platform (XMP) specification*:

— *Part 1: Data model, serialization and core properties*

Future parts will address formal validation of XMP and XML syntax for describing XMP UI elements.

Introduction

This International Standard specifies a standard for the definition, creation, and processing of metadata that can be applied to a broad range of resource types. The Extensible Metadata Platform (XMP) was introduced by Adobe Systems Incorporated in 2001 and has since established itself as a critical technology for improving business efficiency in many industries. The Adobe Systems XMP Specification Part 1 version of July 2010 is the basis for this International Standard. Establishing this International Standard ensures the stability and longevity of its definitions and encourages broader integration and interoperability of XMP with existing standards.

Metadata is data that describes the characteristics or *properties* of a resource. It can be distinguished from the main content of a resource. For example, for a word processing document, the *content* includes the actual text data and formatting information, while the *metadata* might include properties such as author, modification date, or copyright status.

Some information could be treated as either content or metadata, depending on context. In general, metadata is useful without regard for a resource's content. For example, a list of all fonts used in a document could be useful metadata, while information about the specific font used for a specific paragraph on a page would be logically treated as content.

Metadata allows users and applications to work more effectively with resources. Applications can make use of metadata, even if they cannot understand the native format of the resource's content. Metadata can greatly increase the utility of resources in collaborative production workflows. For example, an image file might contain metadata such as its working title, description, and intellectual property rights. Accessing the metadata makes it easier to perform such tasks as searching for images, locating image captions, or determining the copyright clearance to use an image.

File systems have typically provided metadata such as file modification dates and sizes. Other metadata can be provided by other applications, or by users. Metadata might or might not be stored as part of the resource with which it is associated.

This International Standard provides a thorough understanding of the XMP data model. It is useful for anyone who wishes to use XMP metadata, including both developers and end-users of applications that handle metadata for resources of any kind.

The serialization information is vital for developers of applications that will generate, process, or manage files containing XMP metadata. The serialization information will also interest application developers wishing to understand file content. This International Standard also provides additional guidelines for programmers who will implement XMP metadata processors.

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning the creation, processing, modification, and storage of XMP metadata.

ISO takes no position concerning the evidence, validity and scope of this patent right. The holder of this patent right has assured ISO 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 ISO. Information may be obtained from:

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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 above. ISO shall not be held responsible for identifying any or all such patent rights.

Graphic technology — Extensible metadata platform (XMP) specification —

Part 1: Data model, serialization and core properties

1 Scope

This part of ISO 16684 defines two essential components of XMP metadata:

- *Data model*: The data model is the most fundamental aspect. This is an abstract model that defines the forms of XMP metadata items, essentially the structure of statements that XMP can make about resources.
- *Serialization*: The serialization of XMP defines how any instance of the XMP data model can be recorded as XML.

In addition, this part of ISO 16684 defines a collection of *core properties*, which are XMP metadata items that can be applied across a broad range of file formats and domains of usage.

The embedding of XMP packets in specific file formats and domain-specific XMP properties are beyond the scope of this part of ISO 16684.

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.

IEEE 754, *Standard for Binary Floating-Point Arithmetic*

<http://grouper.ieee.org/groups/754/>

IETF RFC 2046, *Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types*, November 1996

<http://www.ietf.org/rfc/rfc2046.txt>

IETF RFC 3066, *Tags for the Identification of Languages*, January 2001

<http://www.ietf.org/rfc/rfc3066.txt>

IETF RFC 3986, *Uniform Resource Identifier (URI): Generic Syntax*, January 2005

<http://www.ietf.org/rfc/rfc3986.txt>

Date and Time Formats, W3C submission, September 1997

<http://www.w3.org/TR/NOTE-datetime>

Dublin Core Metadata Element Set, Version 1.1, October 2010

<http://dublincore.org/documents/dces/>

Extensible Markup Language (XML) 1.0 (Fifth Edition), W3C Recommendation 26 November 2008

<http://www.w3.org/TR/2008/REC-xml-20081126/>

Namespaces in XML 1.0 (Second Edition), August 2006

<http://www.w3.org/TR/2006/REC-xml-names-20060816/>

RDF/XML Syntax Specification (Revised), W3C Recommendation 10 February 2004

<http://www.w3.org/TR/2004/REC-rdf-syntax-grammar-20040210/>

The Unicode Standard

<http://www.unicode.org/standard/standard.html>

URIs, URLs, and URNs: Clarifications and Recommendations 1.0, W3C Note 21 September 2001
<http://www.w3.org/TR/2001/NOTE-uri-clarification-20010921/>

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

character data

XML text that is not markup

[Extensible Markup Language specification, Section 2.4]

3.2

element content

XML text between the start-tag and end-tag of an element

[Extensible Markup Language specification, Section 3.1, syntax production 43]

3.3

empty-element tag

XML tag identifying an element with no content

[Extensible Markup Language specification, Section 3.1]

3.4

NCName

XML name that does not contain a colon (':', U+003A)

[Namespaces in XML, Section 3, syntax production 4]

3.5

property

named container for a metadata value at the top level of an XMP packet

NOTE Lower-level components of an XMP packet are structure fields, array items, and qualifiers.

3.6

RDF

Resource Description Framework, an XML syntax for describing metadata

[RDF/XML Syntax Specification]

3.7

rendition (of a resource)

resource that is a rendering of some other resource in a particular form

NOTE Various renditions of a resource have the same content in differing forms. For example, a digital image could have high resolution, low resolution, or thumbnail renditions. A text document could be in a word processor format for editing or rendered as a PDF for sharing. See also version (of a resource).

3.8

URI

Uniform Resource Identifier, a compact sequence of characters that identifies an abstract or physical resource

[IETF RFC 3986]