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Graphic technology — Extensible metadata platform (XMP) —

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

This second edition cancels and replaces the first edition (ISO 16684-1:2012), which has been technically revised.

A list of all parts in the ISO 16684 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document 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 document. Establishing this document 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 document 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 document 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 conformity 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:

Adobe Systems Incorporated 345 Park Avenue

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Graphic technology — Extensible metadata platform (XMP) —

Part 1:
Data model, serialization and core properties

1 Scope

This document 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 document 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 document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 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*

SET D.C.M.E. Version 1.1, Octor 2010 http://dublincore.org/documents/dces/

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.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:—

ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

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3.1
character data
XML text that is not markup

[SOURCE: Extensible Markup Language specification, Section 2.4]

3.2
element content
XML text between the start-tag and end-tag of an element

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

3.3
empty-element tag
XML tag identifying an element with no content

[SOURCE: Extensible Markup Language specification, Section 3.1]

3.4
NCName
XML name that does not contain a colon (':', U+003A)

[SOURCE: 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 1 to entry: Lower-level components of an XMP packet are structure fields, array items, and qualifiers.

3.6
RDF
Resource Description Framework
XML syntax for describing metadata

[SOURCE: RDF/XML Syntax Specification]

3.7
rendition
<resource>resource that is a rendering of some other resource in a particular form

Note 1 to entry: 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
compact sequence of characters that identifies an abstract or physical resource

[SOURCE: IETF RFC 3986]

3.9
version
<resource> resource that is the result of editing some other resource

Note 1 to entry: Different versions of a resource typically have differing content in the same form. See also rendition (of a resource).

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3.10
XML element
primary component of XML syntax

[SOURCE: Extensible Markup Language specification, Section 3, syntax production 39]

3.11
XML expanded name
pair of strings consisting of a namespace URI and a local name

[SOURCE: Namespaces in XML, Section 2.1]

3.12
XMP processor
hardware or software component that is responsible for reading, modifying, or writing XMP

3.13
white space
XML text consisting of one or more space characters, carriage returns, line feeds, or tabs

[SOURCE: Extensible Markup Language specification, Section 2.3]

4 Notations

The following typeface styles are used for specific types of text:

Table 1 — Conventions for type styles

Typeface style	Used for
Bold	XMP property names. For example, **xmp:CreateDate**
Italic	Terms when defined in text, document titles, or emphasis

The following names are used for important Unicode characters:

— SPACE - U+0020

— QUOTE - U+0022 (")

— APOSTROPHE - U+0027 (')

5 Conformance

5.1 General

Conforming XMP packets shall adhere to all requirements of this document and conforming XMP packets are not required to use any feature other than those explicitly required by this document.

NOTE The proper mechanism by which XML can presumptively identify itself as being an XMP packet is described in 7.3, "Optional outer XML", and 7.4, "rdf:RDF and rdf:Description elements".

5.2 Conforming readers

A conforming reader shall adhere to all requirements regarding reader functional behaviour specified in this document. The requirements of this document with respect to reader behaviour are stated in terms of general functional requirements applicable to all conforming readers. A conforming reader shall accept all output from conforming writers, including optional output that conforming writers may produce. This document does not prescribe any specific technical design, user interface, or implementation details for conforming readers.

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