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SWEDISH STANDARDS INSTITUTE

Grafisk teknik – Digitalt datautbyte – Allmänna metadata för PDF-filer – Del 1: Krav på arkitektur och grundkrav för metadata (ISO 21812-1:2019, IDT)

Graphic technology- Print product metadata for PDF files – Part 1: Architecture and core requirements for metadata (ISO 21812-1:2019, IDT)

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Den internationella standarden ISO 21812-1:2019 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 21812-1:2019.

The International Standard ISO 21812-1:2019 has the status of a Swedish Standard. This document contains the official English version of ISO 21812-1:2019.

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för Grafisk teknik, SIS/TK 434.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

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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*.

A list of all parts in the ISO 21812 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.

Introduction

PDF files represent content pages and do not normally contain information identifying the usage of these content pages in print production. Document part metadata is a simple mechanism that allows for the exchange of information regarding a set of content pages to aid the receiver of the PDF files in determining the intended use of those content pages in the final print product. By understanding the intended use of content pages, the receiver of the PDF file can make more informed decisions regarding the production process for the final print product.

Several Industry groups have initiated work in the area of workflow control and print product semantics for use with document exchange using PDF. These include CIP4, Ghent Workgroup, the PDF/VT Competence Center, and TC 130 WG 2.

A set of application notes for this document may be found at http://www.printtechnologies.org/standards/tools--best-practices/. In addition, pointers may be found on this site to development tools provided for the assistance of developers and users of applications prepared based on this document.

A standard set of such document part metadata is needed to allow composition system and pdf creation vendors to effectively allow their users to communicate with printing and finishing systems that will receive and act on the provided PDF content data. This document defines a standard for document part metadata keys for PDF and their meanings for the purposes of driving workflows or aiding the creation of print production job tickets such as JDF or XJDF.

The intent is to accomplish this through standardizing the document part metadata that can be provided by a document creator. This document builds on the initial CIP4 ICS-Common Metadata for Document Production Workflow published in 2010. This document focuses on defining standardized document part metadata for PDF files using the DPart syntax as defined in ISO 16612-2 (PDF/VT) and ISO 32000-2 (PDF 2.0).

This document is the first part of a series of international standards that define a set of metadata keys and their meanings for use in PDF files to identify printed products and their component pages, to describe their appearance and characteristics and to guide their production.

The structure of the metadata is intended to encapsulate sufficient information in a PDF file to guide the production of printed products without the creator needing to know the details of the production processes that will be used.

It is expected that additional parts of this document will be published that standardize additional print application specific metadata using the architecture defined in this document.

Graphic technology — Print product metadata for PDF files —

Part 1: Architecture and core requirements for metadata

1 Scope

The document part metadata in a PDF file that conforms to this document can be used to communicate the intended appearance of print products and their components. Examples of intended use are: direct interpretation within a production process, creation of job tickets such as XJDF, or populating records in an MIS. This document builds on the DPart syntax as specified in ISO 16612-2 (PDF/VT) and ISO 32000-2 (PDF 2.0) which is designed for encoding metadata related to pages or groups of pages in PDF files.

NOTE The document part metadata provided in this document applies to individual document parts, whereas XMP metadata typically applies to the scope of the entire document. XMP can apply to the scope of an individual page or part of a page but this usage is very uncommon. Thus, XMP is not applicable for the case where metadata is required for sets of pages such as multiple recipients or binding information. For example, XMP is used within PDF/X for file conformance identification and is also used for additional file level information such as author.

This document defines standardized metadata to:

— provide product intent specifications such as paper media selection and binding information;

— identify the type of product that the content pages are intended to represent (e.g. a brochure, letter or postcard);

— identify the intended recipient of each of the content pages for variable document printing applications.

This document defines a base conformance level that includes the syntax of the metadata framework and the semantics of a core set of metadata.

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.

ISO 16612-2, *Graphic technology — Variable data exchange — Part 2: Using PDF/X-4 and PDF/X-5 (PDF/VT-1 and PDF/VT-2)*

ISO 32000-1:2008, *Document management — Portable document format — Part 1: PDF 1.7*

ISO 32000-2, *Document management — Portable document format — Part 2: PDF 2.0*

ISO 12647-2:2013, *Graphic technology — Process control for the production of half-tone colour separations, proof and production prints — Part 2: Offset lithographic processes*

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

LANGUAGE E.M. (XML) 1.0 (Second Edition), 6 October 2000, World Wide Web Consortium, Available from internet <https://www.w3.org>

XJDF Specification, Release 2.0, 2018, CIP4 Organization, Available from internet <https://www.CIP4.org>

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 https://www.electropedia.org/

3.1
JDF
job definition format

3.2
print product
outcome of the processing of a document through a print manufacturing process

Note 1 to entry: Examples include a perfect bound book or postcard.

3.3
product part
part of a print product

Note 1 to entry: Examples include the cover part of a saddle-stitched booklet.

3.4
recipient
person or institution that receives a print product

3.5
XJDF
simplified version of JDF as defined by XJDF Specification Release 2.0

4 Notation

4.1 Keywords

Glossary items are designated in **bold.**

EXAMPLE **recipient**.

Metadata keywords are designated in **bold** font.

EXAMPLE **CIP4_Root**.

Metadata values are designated in *italic* font.

EXAMPLE *true*.

4.2 Cardinality

Optional keys are labelled (Optional) in the description and required keys are labelled (Required).

4.3 Values of lists

This specification provides both open and closed value lists. Open value lists provide a list of suggested values that should be used. Open value lists are marked as (Extendable). Additional values may be added in case no value in the list sufficiently matches the requirements of the conforming writer. Open lists are identified by specifying that one of the values should be used. Closed lists shall not be extended.

Closed lists are identified by specifying that only values that are defined in the list shall be used. Closed value lists are marked as (Closed).

NOTE Some of the standardized metadata values have been defined as open lists of suggested values. The goal is to provide as much interoperability as possible without restricting the use of the standard to a limited set of use cases or print products. If extensions to these open lists are used, the correct interpretation of the extended values needs to be ensured.

4.4 XPath Notation

A notation that is based on XPath will be used to describe nested PDF dictionaries in the **DPart** hierarchy. Unless stated otherwise, no assumption is made whether the respective dictionaries are direct objects or indirect objects within the PDF structure. The root of any such XPath always specifies a child of a **DPM** dictionary. For instance, **CIP4_Root/CIP4_Metadata/CIP4_Conformance** specifies a key named **CIP4_Root** in a **DPM** dictionary that references a dictionary that contains a **CIP4_MetaData** key that references a dictionary that contains a key with the name **CIP4_Conformance.**

5 Conformance

This document specifies a base conformance level for the exchange of document part metadata in PDF files. The base conformance level defines the syntax and semantics of document part metadata properties.

Conforming document part metadata shall conform to all the technical requirements set out in Clauses 6 to 7 of this document. Conforming document part metadata shall include a conforming **CIP4_Root** dictionary at the root of the document part hierarchy of the document part metadata as defined in 7.2 of this document. A conforming writer is an application that shall write a conforming file according to the requirements specified in this document.

A conforming processor is an application that shall read and appropriately process the metadata encoded within a conforming file according to the requirements specified in this document.

A conforming file is a pdf file that contains document part metadata conforming to the requirements specified in this document and that also conforms to ISO 16612-2 (PDF/VT), ISO 32000-2 (PDF 2.0), or any file that is in accordance with ISO 32000-1, such as PDF/X-4 (ISO 15930-7) and that includes an extensions dictionary (ISO 32000-1:2008, 7.12) as follows. The prefix used for the name of the extension shall be GTSm, the value of the **BaseVersion** entry shall be */1.7* and the value of the **ExtensionLevel** entry shall be *1*.

EXAMPLE In a PDF with only this extension, the extensions dictionary would look like:

```
<<
/GTSm << /BaseVersion /1.7 /ExtensionLevel 1 >>
>>
```

6 Technical requirements

6.1 Encoding metadata keys

Each metadata key shall be encoded as a PDF name that consists of the second class name prefix of the metadata property followed by an underscore symbol and the name of the metadata property.

Elements and attributes that are defined in the XJDF namespace but not in this document may be used. They shall then be specified using the local name with a prefix of **CIP4**. A conforming writer wishing to add private metadata properties into the CIP4 hierarchy may do so but shall explicitly identify