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Graphic technology — Print product metadata for PDF files —

Part 1: Architecture and core requirements for metadata

Technologie graphique — Métadonnées des produits d'impression pour les fichiers PDF —

Partie 1: Architecture et exigences principales pour les métadonnées

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Foreword

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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).

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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 those

private metadata properties and levels by specifying an alternate second class name prefix for that property.

NOTE ISO 32000-2:2017, Annex E contains the definition of second class prefixes.

EXAMPLE A vendor that is using the second class name prefix ACME that wishes to encode a value for a key named foobar in the CIP4_Root/CIP4_Recipient hierarchy will therefore use a metadata property called CIP4_Root/CIP4_Recipient/ACME_foobar.

6.2 Encoding metadata values

6.2.1 Mapping of the encoding of XJDF Intent

Explicit product definitions shall only be specified in the **CIP4_Root/CIP4_Intent** hierarchy. This hierarchy is based on the Intent resources that are defined in chapter 6, Product Intent Description of XJDF Specification, Release 2.0, 2018.

The key names in **CIP4_Intent** shall match the respective XJDF Intent element names. Any attributes on an XJDF Intent element shall be specified as keys in their respective parent level.

6.2.2 Encoding of XML

NOTE Most XJDF datatypes are specified in XML Schema Definition Language (XSD) 1.1 Part 2: Datatypes.

The data types of XML attributes shall be mapped according to Table 1 below.

Table 1 — XJDF datatypes

XJDF datatype	PDF datatype	Comments
integer	integer	
float	number	
List	array	Any list that is encoded in XJDF as a whitespace separated list of base type is encoded as an array of the respective base type, e.g. IntegerList will be encoded as an Array of integers.
Range	array	Any range is encoded as an array of 2 elements of the respective base type, e.g. IntegerRange will be encoded as an array of 2 integers.
Enumeration NMTOKEN ID	name	Computer readable values such as NMTOKEN, enumeration or ID are encoded as names.
Enumerations NMTOKENS	array	Lists of computer readable values such as NMTOKEN, enumeration or ID are encoded as array of names
boolean	boolean	
String	text string	NOTE 1 The encoding of text strings as UTF-8 is only valid in ISO 32000-2.
dateTime date	date string	NOTE 2 See 7.9.4 Dates in ISO 32000-2:2017 for a definition of PDF date string.
Any other singular data type	string	This includes duration, etc.

Table 1 *(continued)*

XJDF datatype	PDF datatype	Comments
XML elements with maximum cardinality of one	dictionary	XML elements that are specified in XJDF with a maximum cardinality of 1 shall be encoded as a metadata key whose value is a dictionary. The name of the metadata key shall be the local name of the element with a CIP4 second class name prefix. Any PDF dictionary that represents an XML element may contain an optional key with a name of **Type** and a value of the local name of the element with a CIP4 prefix. NOTE 3 This addition allows for identification of the dictionaries when they are encoded as indirect objects.
XML elements with a maximum cardinality of 2 or more	array	XML elements that are specified in XJDF with a maximum cardinality of 2 or more shall be encoded as a metadata key whose value is an array of dictionaries. The name of the metadata key shall be the local name of the element with a CIP4 second class name prefix. All other restrictions are identical to XML elements with a maximum cardinality of one.

6.3 Document part (DPart) hierarchy

Files conforming to this document shall contain a **DPartRoot** entry in the Catalog dictionary, the value of which shall be the root node of a hierarchy of **DPart** dictionaries (a document part hierarchy).

The hierarchy of **DPart** dictionaries and the **DPart** entries in page objects shall conform to 14.12 of ISO 32000-2:2017.

NOTE 1 The reference to 14.12 of ISO 32000-2:2017 is included solely for the purpose of defining the document part hierarchy; there is no requirement that a file that complies with the ISO 21812 series need be a compliant 32000-2 file in other respects. See Clause 5 Conformance.

The root node of the **DPart** hierarchy shall contain a **DPM** key, and other **DPart** dictionaries may contain a **DPM** key.

NOTE 2 A **DPM** key in the root is necessary to carry the metadata required by Clause 5 Conformance.

If metadata in conformance with this document is to be associated with a node of the **DPart** hierarchy then the **DPart** shall reference a **DPM** dictionary that shall reference the **CIP4_Root** dictionary that contains the metadata.

6.4 Defining metadata within a DPart

Metadata properties defined for a given **DPart** shall be considered to apply to all **DPart**s that are child nodes of that **DPart**. Metadata properties shall not be specified in **DPart**s that are in the scope of parent **DPart**s which already specify the same metadata properties. In accordance with ISO 16612-2 and ISO 32000-2, each **DPart** node may have at most one **DPM** containing a dictionary of one or more metadata properties from the common metadata hierarchy specified within it.

6.5 Registered second class name prefixes

Table 2 defines the list of registered second class name prefixes.

Table 2 — Registered Second Class Name Prefixes

Prefix	Namespace URI	Organization
GTS	http://www.npes.org/pdfx/ns/id/	NPES and ISO
CIP4	http://www.CIP4.org/PDFMetaData_2_0	CIP4

7 CIP4 Common metadata hierarchy

7.1 Background

The CIP4 Common metadata hierarchy is designed to associate metadata to individual pages or ranges of pages. Standard metadata definitions are provided by this document for use in describing:

— finished printed products or pages of printed products;

— summary information to aid in optimizing the production process;

— recipient information for variable data jobs.

7.2 CIP4_Root hierarchy

At least one **DPM** dictionary of a conforming file shall have a **CIP4_Root** key whose value is a reference to a **CIP4_Root** dictionary.

The root dictionary of CIP4 metadata trees is **CIP4_Root.** Some types of metadata are restricted in scope to specific **DParts**. These restrictions are called out in the column labelled "Scope" in Table 3. Some metadata types can only occur at certain levels within the **DPart** hierarchy. These restrictions are called out in the column labelled scope. The following levels are defined.

— **any**: The metadata may occur at any level in the **DPart** hierarchy.

— **root**: The metadata shall occur only in the document root in the **DPart** hierarchy. The root **DPart** is defined as the **DPart** that is referenced from **DPartRoot**.

— **record**: The metadata shall occur only in the recipient level in the **DPart** hierarchy.

Table 3 — CIP4_Root

Name	Data type	Scope	Description
Type	name	any	(Required) The value of **Type** shall be *CIP4_Root*.
CIP4_DescriptiveName	string	any	(Optional) Human readable description of the **DPart**.
CIP4_ExternalID	name	any	(Optional) External identifier of the **DPart**.
CIP4_Intent	dictionary	any	(Optional) **CIP4_Intent** specifies the creator's view of a product or document.
CIP4_IntentSummary	dictionary	any	(Optional) **CIP4_IntentSummary** shall specify intent properties of a **DPart** that are in use within the scope of the **DPart**. If present, all references to specific intents from **CIP4_Root/CIP4_Intent** shall be indirect references to a specific intent that is referenced from **CIP4_IntentSummary**.
CIP4_Metadata	dictionary	root	(Required) The **CIP4_Metadata** dictionary contains metadata properties that provide information regarding the PDF document as a whole.
CIP4_Production	dictionary	any	(Optional) The **CIP4_Production** dictionary contains metadata properties that may be used to parameterize a job ticket or provide additional production information that is not available in **CIP4_Root/CIP4_Intent**.
CIP4_Recipient	dictionary	record	(Optional) The **CIP4_Recipient** dictionary contains metadata properties with information regarding the intended recipient of the pages. **CIP4_Recipient** shall not be specified in **DPart** levels other than those selected by the value of **RecordLevel** in **DPartRoot**.

7.3 CIP4_Metadata level

Table 4 defines the **CIP4_Root/CIP4_Metadata** level that shall contain metadata properties that provide information regarding the PDF document as a whole. The **CIP4_Root/CIP4_Metadata** shall not be defined in any **DPart** node other than the root **DPart** node.

Table 4 — CIP4_Metadata

Name	Data type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_Metadata*.
CIP4_Accounting	dictionary	(Optional) **CIP4_Accounting** identifies the **CIP4_Contact** information of where to send the invoice for the production of the PDF data.
CIP4_Administrator	dictionary	(Optional) **CIP4_Administrator** identifies the **CIP4_Contact** information regarding the execution of the PDF data.
CIP4_Author	dictionary	(Optional) **CIP4_Author** identifies the **CIP4_Contact** information for the author of the PDF data.
CIP4_Conformance	array	(Required) **CIP4_Conformance** is an array of string that indicates the conformance to which the metadata in the PDF data adheres. A value of *CIP4_IntentBase_2.0* shall be used if no other more restrictive value applies. NOTE 1 The value of *CIP4_IntentBase_2.0* was chosen to indicate that current intent is a mapping from XJDF. Each ICS that restricts the use of metadata properties defined in this ICS should include a required value for this metadata property that uniquely identifies that ICS. That required value shall adhere to the requirements for XML name token.
CIP4_Creator	string	(Required) **CIP4_Creator** identifies the conforming writer of the metadata.
CIP4_JobID	name	(Optional) **CIP4_JobID** identifies the job or contract to which the PDF data as a whole belongs in the context of the originating system.
CIP4_ModificationDate	date string	(Optional) **CIP4_ModificationDate** identifies the date at which the PDF data was last modified or created. A conforming writer shall update **CIP4_ModificationDate** to the current date and time whenever the PDF file is modified. NOTE 2 **CIP4_ModificationDate** allows detection of the modifications to PDF data by a non-conforming writer. The PDF specification already encodes a last modification date but this modification date by itself is not necessarily sufficient to detect modifications relating to the metadata by a non-conforming writer.
CIP4_ProjectID	name	(Optional) **CIP4_ProjectID** identifies the project or group of jobs that the PDF data as a whole belongs to in the context of the originating system.
CIP4_Sender	dictionary	(Optional) **CIP4_Sender** identifies the **CIP4_Contact** information for the sender or originator of the PDF data.

7.4 Recipient level

Table 5 CIP4_Recipient contains metadata properties with information regarding the intended recipient of the pages.

Table 5 — CIP4_Recipient

Name	Data type	Description
CIP4_ExternalID	name	(Optional) The value of the **CIP4_ExternalID** property shall uniquely identify the recipient within this PDF document.
CIP4_Contact	dictionary	(Optional) The value of the **CIP4_Contact** property shall provide contact information about the recipient.

7.5 Intent level

7.5.1 Background

In XJDF from which this document has been derived, Product Intent specifies the creator's view of a product or document. Providing intent level information within the **CIP4_Root/CIP4_Intent** hierarchy of a PDF allows a PDF creator to specify additional properties that define how the respective pages that are referenced by the **DPart** shall be used in the context of a finished printed product.

7.5.2 Intent referencing

Each dictionary in Table 6 CIP4_Intent**,** should be an indirect reference to a dictionary that is referenced from **CIP4_Root/CIP4_IntentSummary** under the same name.

Table 6 — CIP4_Intent

Name	Data type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_Intent*.
CIP4_ProductType	name	(Optional, Extendable) The value of **CIP4_ProductType** property shall indicate the general product class that the **DPart** represents. The name should be one of the following: — *BackCover*: The last page or sheet of a soft-cover book or magazine, commonly a heavier media. — *Body*: Generic content inside of a *Cover*. — *Book*: *Body* with a *Cover* and a *Spine.* — *BookBlock:* The assembled body of pages for a hard-cover book. — *BookCase:* The assembled covers and spine component of a hard-cover book, prior to "casing in" (attaching to the book block) — *Booklet*: *Body* with a *Cover* without a *Spine* (typically stapled).

Table 6 *(continued)*

Name	Data type	Description
		— *Box*: Convenience packaging that is not envisioned to be protection for shipping. — *Brochure*: A single folded sheet. — *BusinessCard:* A small card that displays contact information for an individual employed by a company. — *Cover*: A single sheet covering a side of a print product. — *CoverLetter*: A letter accompanying another print product. — *Envelope*: A folded paper container, with sealable flap, that encloses and protects a document or contents. — *FrontCover:* The first page or sheet of a soft-cover book or magazine, commonly a heavier media. — *Insert*: A product part intended to be inserted into a print product — *Jacket*: Hard cover case jacket — *Label*: A piece of paper or plastic that is attached to an object in order to give information about it. — *Leaflet*: A single unfolded sheet — *Letter:* A written or printed communication addressed to a person or organization and usually transmitted by mail or messenger. — *Map:* A drawing/representation of a particular area such as a city, or a continent, showing its main features, as they would appear if viewed from above. — *Newspaper:* A newspaper product. — *Notebook:* A book or block with a set of identical or similar pages, e.g. a writing tablet, where all page fronts have identical content, and all page backs have identical content. — *Postcard:* A card designed for sending a message by mail without an envelope. — *Poster:* A large printed picture. — *ResponseCard*: A *SelfMailer* to respond to an offer. — *Section:* Main division of a book such as a chapter, typically with a name or number. — *SelfMailer*: A document to be sent via the post without an additional envelope. — *Spine*: The bound edge of a book. Also, the portion of the cover that connects the front and back cover, wrapping the binding edge. — *WrapAroundCover*: A single sheet containing the front cover, spine and back cover.

Table 6 *(continued)*

Name	Data type	Description
		The value of the **CIP4_ProductType** property may be any name but for sake of interoperability and automatic processing the property should be given a value listed in this specification if the finished product has the same physical characteristics or purpose. EXAMPLE 1 An invoice can be classified as a *Letter* if it is sent in a windowed envelope or as a *SelfMailer* if the invoice pages will be folded and glued into an addressed envelope. EXAMPLE 2 A data sheet can be classified as a *Leaflet* if it is a single unfolded sheet or as a *Brochure* if it's a single folded sheet or a *Booklet* if it contains multiple pages stapled together.
CIP4_AssemblingIntent	dictionary	(Optional) **CIP4_AssemblingIntent** specifies how various parts of a PDF document are inserted into containers such as envelopes or assembled with manufactured products such as stands for banners. **CIP4_AssemblingIntent** shall not be specified if **CIP4_BindingIntent** is present
CIP4_BindingIntent	dictionary	(Optional) **CIP4_BindingIntent** specifies details of Binding. **CIP4_BindingIntent** shall not be specified if **CIP4_AssemblingIntent** is present.
CIP4_ColorIntent	dictionary	(Optional) **CIP4_ColorIntent** specifies details of coating and that are independent of the print process.
CIP4_FoldingIntent	dictionary	(Optional) **CIP4_FoldingIntent** specifies details of folding of the finished product that are not implied by the value of **CIP4_BindingIntent/CIP4_BindingType**.
CIP4_HoleMakingIntent	dictionary	(Optional) **CIP4_HoleMakingIntent** specifies details of hole punching.
CIP4_LayoutIntent	dictionary	(Optional) **CIP4_LayoutIntent** specifies details of page layout.
CIP4_MediaIntent	dictionary	(Optional) **CIP4_MediaIntent** specifies the media that shall be printed.

7.6 Supported XJDF Intents

7.6.1 Background

Various Intents are predefined in XJDF and a subset of recommended intents is defined in this chapter. Additional XJDF Intent types such as **CIP4_EmbossingIntent** or **CIP4_ShapeCuttingIntent** may be present, e.g. to provide additional product finishing information. All Intent values are optional. Intent values that are defined in XJDF that are not listed in this subclause may be mapped according to the rules in 6.2.1 Mapping of the encoding of XJDF Intent.

7.6.2 Scope of Intents

Intent Dictionaries with the exception of **CIP4_BindingIntent** and **CIP4_AssemblingIntent** shall apply to the **DPart** in which they are specified and to all descendant **DPart**s of that **DPart**. When **CIP4_BindingIntent** and **CIP4_AssemblingIntent** are used in a non-leaf **DPart**, the components represented by the direct descendants of said **DPart** shall be bound or inserted according to the instructions in **CIP4_BindingIntent** or **CIP4_AssemblingIntent.** When **CIP4_BindingIntent** is specified in a leaf **DPart,** the component represented by said **DPart** shall be bound according to the instructions in **CIP4_BindingIntent**.

7.6.3 CIP4_Intent/CIP4_AssemblingIntent

The **CIP4_Root/CIP4_Intent/CIP4_AssemblingIntent** (see Table 7) specifies how various parts of a PDF document are inserted into containers such as envelopes, boxes or into other printed products such as brochures or magazines.

If no additional **CIP4_FoldingIntent** is specified for a container, the **MediaBox** and other PDF boxes shall apply to the finished size of the container and the sides of the Media refer to the front and back side of the container. If **CIP4_FoldingIntent** is specified for a container, the **MediaBox** and other PDF boxes shall apply to the flat size of the media used to construct the container and the front side of the Media refers to the outside of the flat media prior to folding. In case of 3-Dimensional containers, **CIP4_Intent/CIP4_LayoutIntent/CIP4_FinishedDimensions** should be specified.

Each container is represented by a **DPart** and the PDF pages contained in that **DPart** describe the appearance of the container. If the container is not itself personalised, then the PDF pages describing the appearance of the container should be marked as static by specifying a **CIP4_ExternalID.**

NOTE For 2-dimensional containers with negligible thickness such as an envelope the **DPart** describing the appearance of the container has one or two pages, showing the appearance of the front and back of the container. For 3-dimensional containers such as a box the **DPart** describing the appearance of the container also has one or two pages but contains the appearance of the front (outside) and back (inside) of the flat from which the container is constructed by folding, trimming, cutting, etc.

Table 7 — CIP4_AssemblingIntent

Name	Data type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_AssemblingIntent*.
CIP4_Container	dictionary	(Required, shall be an indirect reference) **CIP4_Container** shall reference the main **DPart** dictionary that the additional **DParts** that are referenced from **CIP4_AssemblyItem**, **CIP4_BindIn**, **CIP4_BlowIn** or **CIP4_StickOn** are assembled with. **CIP4_Container** shall not reference the parent **DPart** of this **CIP4_AssemblingIntent**.
CIP4_AssemblyItem	array	(optional) Each **CIP4_AssemblyItem** in the array shall describe an individual item that is assembled with the main **DPart** that is referenced by **CIP4_Container**. See Table 8 CIP4_AssemblyItem.
CIP4_BindIn	array	(optional) Each **CIP4_BindIn** in the array shall describe an individual insert that is glued into the main **DPart** that is referenced by **CIP4_Container**. The details of CIP4_BindIn are defined in Table 9.
CIP4_BlowIn	array	(optional) Each **CIP4_BlowIn** in the array shall describe an individual insert that is loosely inserted into the main **DPart** that is referenced by **CIP4_Container**. The details of CIP4_BlowIn are defined in Table 10.
CIP4_StickOn	array	(optional) Each **CIP4_StickOn** in the array shall describe an individual insert that is glued onto the main **DPart** that is referenced by **CIP4_Container**. The details of CIP4_StickOn are defined in Table 11. NOTE **CIP4_StickOn** is typically used for labels.

Table 8 — CIP4_AssemblyItem

Name	Data type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_AssemblyItem*.
CIP4_Child	dictionary	(Required, shall be an indirect reference) **CIP4_Child** shall reference the **DPart** dictionary that represents any individual item that shall be assembled with the main **DPart**. Examples of assembly items include roll-up banner stands or frames.

Table 9 — CIP4_BindIn

Name	Data type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_BindIn*.
CIP4_Child	dictionary	(Required, shall be an indirect reference) **CIP4_Child** shall reference the **DPart** dictionary that represents the insert.

Table 10 — CIP4_BlowIn

Name	Data type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_BlowIn*.
CIP4_Child	dictionary	(Required, shall be an indirect reference) **CIP4_Child** shall reference the **DPart** dictionary that represents the insert.

Table 11 — CIP4_StickOn

Name	Data type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_StickOn*.
CIP4_Child	dictionary	(Required, shall be an indirect reference) **CIP4_Child** shall reference the **DPart** dictionary that represents the label.

7.6.4 CIP4_Intent/CIP4_BindingIntent

7.6.4.1 CIP4_BindingIntent

CIP4_Root/CIP4_Intent/CIP4_BindingIntent specifies details of binding. All pages that are referenced by this **DPart** node or any of this **DPart** node's descendant **DPart** nodes shall be bound together according to the method specified in Table 12 CIP4_BindingIntent.

Table 12 — CIP4_BindingIntent

Name	Data type	Description
Type	name	(Required)The value of **Type** shall be *CIP4_BindingIntent*.
CIP4_BindingSide	name	(Optional, Closed) The value of **CIP4_BindingSide** shall be one of the following. — *Left*: shall be used for binding on the left edge of the product part. — *Right*: shall be used for binding on the right edge of the product part. — *Top*: shall be used for binding on the top edge of the product part. — *Bottom*: shall be used for binding on the bottom edge of the product part.
CIP4_BindingType	name	(Required, Closed) **CIP4_BindingType** shall specify the requested binding method. If the binding method implies folding or requires holes, the implied **CIP4_HoleMakingIntent** or **CIP4_FoldingIntent** need not be specified. The value of **CIP4_BindingType** shall be one of the following. — *AdhesiveNote*: Binding with removable adhesive on the back side of a product. Typically used for small brightly colored paper designed to be stuck prominently to an object or surface and easily removed when necessary. — *ChannelBinding:* Metal clamps are used to bind sheets. — *CoilBinding:* Metal wire, wire with plastic or pure plastic is used to fasten prepunched sheets of paper, cardboard or other materials. **CIP4_HoleMakingIntent/CIP4_Holetype** need not be specified for the holes that are required for *CoilBinding*. — *CornerStitch:* Stitch in the corner that is at the clockwise end binding edge. For example, to stitch in the top left corner, set **CIP4_BindingSide** to "Left".

Table 12 *(continued)*

Name	Data type	Description
		— *EdgeGluing*: Gluing gathered sheets at one edge of the pile. This type of binding can be handled with the Gluing process. Products of this type are also referred to as padded. — *HardCover*: This type of binding defines a hard-cover bound book. — *LooseBinding*: Generic loose binding - one of *CoilBinding*, *PlasticComb*, *Ring*, *StripBind* and *WireComb*. — *None*: This type of binding defines a stack of pages with no additional binding. — *PlasticComb*: Plastic insert wraps through pre-punched holes in the substrate. **CIP4_HoleMakingIntent/CIP4_Holetype** need not be specified for the holes that are required for *PlasticComb.* — *RingBinding:* Pre-punched sheets are placed in a ring binder. **CIP4_HoleMakingIntent/CIP4_Holetype** need not be specified for the holes that are required for *RingBinding.*
		— *SaddleStitch:* **CIP4_FoldingIntent/CIP4_FoldingCatalog** need not be specified for the single saddle fold value of *F4-1*. — *SideStitch:* Stitch with multiple stitches on the binding edge. — *SoftCover*: This type of binding defines a soft cover bound book. It includes perfect binding. — *StripBind*: Hard plastic strips are held together by plastic pins, which in turn are bound to the strips with heat. — *Tape:* This type of binding is an inexpensive version of the *SoftCover*. — *WireComb:* Plastic or metal insert wraps through pre-punched holes in the substrate. **CIP4_HoleMakingIntent/CIP4_Holetype** need not be specified for the holes that are required for *WireComb*.
CIP4_SaddleStitching	dictionary	(Optional) The **CIP4_SaddleStitching** dictionary specifies the details of saddle stitching. **CIP4_SaddleStitching** shall only be present if **CIP4_BindingType** is *SaddleStitch*.
CIP4_SideStitching	dictionary	(Optional) The **CIP4_SideStitching** dictionary specifies the details of side stitching. **CIP4_SideStitching** shall only be present if the value of **CIP4_BindingType** is *SideStitch*.

7.6.4.2 CIP4_SaddleStitching

Table 13 CIP4_SaddleStitching specifies the details of saddle stitching. **CIP4_SaddleStitching** shall only be present if the value of **CIP4_BindingType** is *SaddleStitch.*

Table 13 — CIP4_SaddleStitching

Name	Data type	Description
Type	name	(Required) The value of **Type** shall be **CIP4_SaddleStitching.**
CIP4_StitchNumber	integer	(Optional) **CIP4_StitchNumber** specifies the number of stitches for SaddleStitching.

7.6.4.3 CIP4_SideStitching

Table 14 CIP4_SideStitching specifies the details of side stitching. **CIP4_SideStitching** shall only be present if the value of **CIP4_BindingType** is *SideStitch*.

Table 14 — CIP4_SideStitching

Name	Data type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_SideStitching*.
CIP4_StitchNumber	integer	(Optional) **CIP4_StitchNumber** specifies the number of stitches for SideStitching.

7.6.5 CIP4_Intent/CIP4_ColorIntent

Table 15 CIP4_ColorIntent specifies details of flood varnishing of complete surfaces.

NOTE Since Pages are already linked to a surface in PDF, XJDF Colorintent/SurfaceColor elements are mapped directly to **CIP4_ColorIntent**.

Table 15 — CIP4_ColorIntent

Name	Data type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_ColorIntent*.
CIP4_Coatings	array	(Optional, Extendable) Coatings shall specify the list of protective coatings or varnishes that shall be applied to the surface. The values of **CIP4_Coatings** shall be names that should be chosen from the following list. — *Aqueous:* Water based coating. — *Gloss*: Glossy coating. — *Matte*: Matte coating. — *Primer*: A coating that is applied beneath the image. — *RubResistant*: Property of the coating. — *Satin*: A coating between *Gloss* and *Matte*. — *UV*: Ultra violet cured polymers. — *Varnish*: Unpigmented ink. — *WaterResistant*: Property of the coating.

7.6.6 CIP4_Intent/CIP4_FoldingIntent

Table 16 CIP4_FoldingIntent specifies details of folding of the finished product that are not implied by the value of **CIP4_BindingIntent/CIP4_BindingType**. If a **CIP4_BindingIntent/CIP4_BindingType** implies a given fold, then **CIP4_Root/CIP4_Intent/CIP4_FoldingIntent** shall not be specified to describe that fold. Production folds such as those used when pages are imposed on press sheets shall not be specified. All pages that are directly or indirectly referenced by this **DPart** node shall be folded together according to the method specified in **CIP4_FoldingIntent**. Logically all the pages directly or indirectly referenced by this **DPart** Node shall be folded as if the stack of pages was folded as a single entity. The number and distribution of pages on sheets MAY be defined in **CIP4_Root/CIP4_Intent/CIP4_LayoutIntent/CIP4_SpreadType**.

Table 16 — CIP4_FoldingIntent

Name	Data Type	Description
Type	name	(Required) The value of Type shall be *CIP4_FoldingIntent*.
CIP4_FoldCatalog	name	(Optional, Extendable) **CIP4_FoldCatalog** property shall have a value of type name. The value should be one of the following.

Table 16 *(continued)*

Name	Data Type	Description
		— *F2-1:* No fold — *F4-1:* Single fold — *F6-1:* Zigzag fold — *F6-3:* Altar fold — *F6-4:* Tri fold — *F6-7*: Z-fold — *F8-2*: Parallel fold — *F8-4*: Gate fold NOTE Additional values of **CIP4_FoldingCatalog** can be supported. Details of the folding schemes and additional values can be found in: XJDF Appendix Fold Catalogs.
CIP4_Orientation	name	(Optional, Closed) **CIP4_Orientation** shall specify the orientation of the unfolded sheet with respect to the Lay of the fold catalog entry. The value shall be one of the following. — *Rotate0*: The lay of the fold shall be the lower left corner of the sheet, face up. This is the default value. — *Rotate90*: The lay of the fold shall be the upper left corner of the sheet, face up. — *Rotate180*: The lay of the fold shall be the upper right corner of the sheet, face up. — *Rotate270*: The lay of the fold shall be the lower right corner of the sheet, face up. — *Flip0*: The lay of the fold shall be the upper right corner of the sheet, face down. — *Flip90*: The lay of the fold shall be the upper left left corner of the sheet, face down. — *Flip180*: The lay of the fold shall be the lower left corner of the sheet, face down. — *Flip270*: The lay of the fold shall be the lower right corner of the sheet, face down.

Table 17 **CIP4_FoldCatalog** illustrates some of the more common CIP4 folding scheme values.

Table 17 — CIP4_FoldCatalog

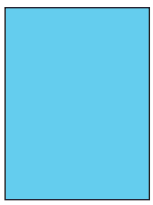
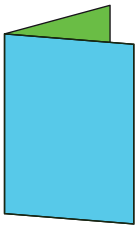
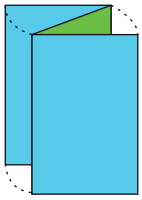
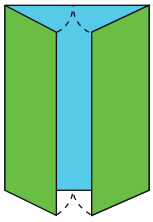
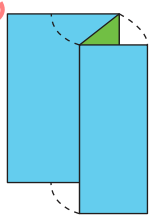
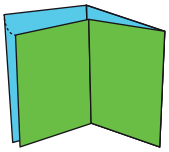
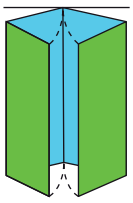
Name	Illustration	Description
F2-1		No fold

Table 17 *(continued)*

Name	Illustration	Description
F4-1		Single fold
F6-1		Zigzag fold
F6-3		Altar fold
F6-4		Tri-fold.
F6-7		Z-Fold
F8-2		Parallel fold
F8-4		Gate fold.

7.6.7 CIP4_Intent/CIP4_HoleMakingIntent

Table 18 CIP4_HoleMakingIntent specifies details of hole punching.

If a **CIP4_BindingIntent/CIP4_BindingType** implies a given **CIP4_HoleMakingIntent,** then **CIP4_HoleMakingIntent** need not be specified unless additional holes to those implied by **CIP4_BindingIntent/CIP4_BindingType** are required,

Example: Ring binding in a two-hole binder with holes for both two-hole and three-hole binding. In this case the complete **CIP4_Root/CIP4_Intent/CIP4_HoleMakingIntent** including the entry specifying the holes implied by **CIP4_BindingIntent/CIP4_BindingType** shall be specified.

Table 18 — CIP4_HoleMakingIntent

Name	Data Type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_HoleMakingIntent*.
CIP4_HolePattern	array	(Required) **CIP4_HolePattern** shall define the hole patterns. See Table 19 CIP4_HolePattern

7.6.7.1 CIP4_HoleMakingIntent/CIP4_HolePattern

Table 19 CIP4_HolePattern defines a single hole or set of holes.

Table 19 — CIP4_HolePattern

Name	Data Type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_HolePattern*.
CIP4_HoleReferenceEdge	name	(Optional, Closed) **CIP4_HoleReferenceEdge** shall specify the reference edge for the line of holes. The value shall be one of the following. — *Left*: to be used for holes on the left edge of the product part. — *Right*: to be used for holes on the right edge of the product part. — *Top*: to be used for holes on the top edge of the product part. — *Bottom*: to be used for holes on the bottom edge of the product part. — *Pattern*: to be used for holes as implied by **CIP4_Pattern.**
CIP4_Pattern	name	(Optional, Extendable) **CIP4_Pattern** shall define the hole patterns. Each name contained in **CIP4_Pattern** shall be a hole pattern name listed in Appendix G Hole Pattern catalog of the XJDF specification.

7.6.8 CIP4_Intent/CIP4_LayoutIntent

Table 20 CIP4_LayoutIntent specifies details of the page layout.

Table 20 — CIP4_LayoutIntent

Name	Data Type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_LayoutIntent*.
CIP4_Sides	name	(Required, Closed) **CIP4_Sides** shall specify which sides to print and how front and back pages are oriented. The value shall be one of the following.

Table 20 *(continued)*

Name	Data Type	Description
		— *OneSided*: Page contents shall be imaged on the front side of the media or the outside of a cover. — *OneSidedBack*: Page contents shall be imaged on the back side of the media or the inside of a cover. — *TwoSidedHeadToHead*: Page contents shall be imposed on the front and back sides of media sheets so that the head (top) of the front backs up to the foot (bottom) of the back. — *TwoSidedHeadToFoot*: Page contents shall be imposed on the front and back sides of media sheets so that the head (top) of the front backs up to the foot (bottom) of the back.
CIP4_FinishedDimensions	array	(Optional) **CIP4_FinishedDimensions** shall specify an array of number that define the width (X), height (Y) and depth (Z) in points, respectively, of the finished product after all finishing operations, including folding, trimming, etc. have been applied. The PDF pages referenced by the **DPart** node for which **CIP4_FinishedDimensions** is specified describe the flat from which the finished component is created by applying cutting, folding, trimming, etc. If the **TrimBox** of the PDF pages are equal to the width and height specified in **CIP4_FinishedDimensions** then the PDF pages shall specify the front (top) and back (bottom) of the finished product component, otherwise the PDF pages shall specify the front and back of the flat from which the finished product Component will be constructed by applying cutting, folding, trimming, etc. In the absence of **CIP4_FinishedDimensions** the width and height of the finished product Component should be taken from the **TrimBox** of the PDF pages and the depth of the finished product Component should be calculated from the thickness of the media used for the container and its content.
CIP4_SpreadType	name	(Optional, Closed) **CIP4_SpreadType** shall specify the treatment of individual PDF pages referenced by the **DPart** node for which **CIP4_SpreadType** is specified for imposition purposes. The value shall be one of the following. — *SinglePage*: the content of each page shall be imaged in a single cell in imposition. — *Spread*: the content of each page shall be imaged as a single surface onto the final product. Examples include wraparound covers. Spread should not be provided for adjacent pages that are not imaged onto the same surface. If not specified, **CIP4_SpreadType** defaults to *SinglePage*.

7.6.9 CIP4_Intent/CIP4_MediaIntent

Table 21 CIP4_MediaIntent specifies details of the selected media to be printed on.

NOTE 1 This document provides 2 methods for selecting media. Media can be selected by name by specifying **CIP4_MediaIntent/CIP4_MediaQuality**. Selection by name requires out of bands synchronization of the supported values of **CIP4_MediaIntent/CIP4_MediaQuality**. Media can also be specified in more detail by supplying any of the additional keys of **CIP4_MediaIntent** that are listed below. The differences of what is important in media vary greatly on the customer requirements and are therefore a complete description can be elusive.

NOTE 2 A change of product metadata may require media changes prior to filling an entire sheet, for instance if an odd number of pages is specified for duplex printing. The distribution of the remaining pages onto the sheet is device dependent.

Table 21 — CIP4_MediaIntent

Name	Data Type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_MediaIntent*.
CIP4_BackCoating	name	(Optional, Closed) **CIP4_BackCoating** shall specify the pre-process coating of the back side of the Media. If not specified, the value defaults to the value of **CIP4_Coating.** Values are the same as in **CIP4_Coating**.
CIP4_Coating	name	(Optional, Closed) **CIP4_Coating** describes the pre-process coating of the Media. Values shall be one of the following.
		— *None:* No coating. — *Coated:* A coating of a system specified type. — *Gloss:* A glossy coating. — *Matte:* A matte coating. — *Satin:* A coating between *Gloss* and *Matte*.
CIP4_ISOPaperSubstrate	name	(Optional, Closed) **CIP4_ISOPaperSubstrate** shall have a value in the range of *PS1* through *PS8* in accordance with the Print Substrate set forth in [ISO 12647-2:2013].
CIP4_LABColorValue	array	(Optional) **CIP4_LABColorValue** shall specify an array of number that defines the CIELAB colour value of the media, computed as specified in [TAPPI T527].
CIP4_MediaColor	name	(Optional, Closed) **CIP4_MediaColor** is a machine readable colour descriptor. Values shall be taken from https://www.w3.org/TR/html4/types.html#h-6.5.
CIP4_MediaColorDetails	string	(Optional) **CIP4_MediaColorDetails** is a human readable colour descriptor.
CIP4_MediaQuality	string	(Optional) **CIP4_MediaQuality** shall specify the media to be selected in a processor specific manner. This may be a media identifier from a device media catalogue, a media source such as an input tray or a media size or any other media selection method that the conforming processor understands.
CIP4_MediaTypeDetails	name	(Optional, Extendable) **CIP4_MediaTypeDetails** describes the details of the media such as *Envelope* or *Labels*.
CIP4_Weight	number	(Optional) **CIP4_Weight** shall specify the intended specific weight of the media, measured in grammage (g/m^2).

NOTE 3 **CIP4_MediaIntent** does not allow for pre-printed paper to be specified as this is considered part of the production process rather than a product intent. Each page whose content starts with the same static optional content can be produced using preprinted media by switching off the static optional content and using appropriate preprinted media. The benefit of this workflow is that the PDF has the correct appearance and the selection and placement of the pre-printed paper in a paper tray can be correctly identified by looking at the PDF. Static optional content can be identified by examining the usage directory of optional content groups. The value of the **PageElement** key will be a dictionary with a **SubType** key with a value of *BG* or *L*.

NOTE 4 **CIP4_MediaTypeDetails** and **CIP4_ProductType** serve distinct purposes: **CIP4_MediaTypeDetails** provides information about the media to be used for a given PDF page, whilst **CIP4_ProductType** typically provides information regarding the purpose of a component of the finished product. **CIP4_MediaTypeDetails** and **CIP4_ProductType** may be specified on the same **DPart** Node when a range of PDF pages are to use the same media or where a single PDF page comprises a component of the finished product. In all cases **CIP4_MediaType Details** controls the media to be used, whilst **CIP4_ProductType** is only used to guide production decisions and aid in the identification of components.

7.6.10 CIP4_Intent/CIP4_ProductionIntent

Table 22 CIP4_ProductionIntent specifies high level production requirements such as the desired print process or printing mode.

Table 22 — CIP4_ProductionIntent

Name	Data Type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_ProductionIntent*.
CIP4_PrintPreference	name	(Optional, Closed) Intended result or goal. The value shall be one of the following. — *Balanced*: Request for a manufacturing process that balances the requirements for cost, speed and quality. — *CostEffective*: Request for the most cost effective manufacturing process. — *Fastest*: Request for the most time effective manufacturing process. Cost and quality can be sacrificed for a fast turnaround time. — *HighestQuality*: Request for the manufacturing process which will result in the highest quality.
CIP4_PrintProcess	array	(Optional, Extendable) **CIP4_PrintProcess** specifies the print processes requested If more than one value is specified, then **CIP4_PrintProcess** requests hybrid printing, e.g. inkjet imprint on a preprinted shell. Each value should be one of the following. — *DyeSublimation*: For digital printing. — *ElectroInk*: Digital printing with liquid toner. — *Electrophotography*: Electrophotographic printing with toner. — *Flexography*: For conventional printing. — *Rotogravure*: For conventional printing. — *InkJet*: For digital printing. — *Latex*: Specific type of inkjet. — *Letterpress*: Conventional printing with traditional relief masters. — *OffsetLithography*: For conventional printing. — *Potato*: Unconventional printing using a carved potato as a print master. — *ScreenPrinting*: For conventional printing. — *Thermal*: For digital printing. — *UV*: For digital printing.

7.7 Restrictions on mapping XJDF Intent types

The following restrictions shall be adhered to when mapping XJDF Intent Resources to PDF Metadata.

— **CIP4_ColorIntent:** Information about printing colour conditions is out of scope. This information shall be provided using the standard methods defined for PDF, e.g. output profiles.

7.8 CIP4_IntentSummary level

The **CIP4_Root/CIP4_IntentSummary** property defines a summary of all intent resources and shall have a value of type array of dictionary. Values are as shown in Table 23 CIP4_IntentSummary.

Each dictionary within **CIP4_IntentSummary** should be referenced at least once by **CIP4_Root/CIP4_Intent** properties that are defined within the **DPart** in which this property is defined.

Table 23 — CIP4_IntentSummary

Name	Data type	Description
Type	name	(Required) The value of **Type** shall be *CIP4_IntentSummary*.
CIP4_AssemblingIntent	array	(Optional) The array elements shall be indirect references to dictionaries that adhere to the requirements for **CIP4_AssemblingIntent**.
CIP4_BindingIntent	array	(Optional) The array elements shall be indirect references to dictionaries that adhere to the requirements for **CIP4_BindingIntent**.
CIP4_ColorIntent	array	(Optional) The array elements shall be indirect references to dictionaries that adhere to the requirements for **CIP4_ColorIntent**.
CIP4_FoldingIntent	array	(Optional) The array elements shall be indirect references to dictionaries that adhere to the requirements for **CIP4_FoldingIntent**.
CIP4_HoleMakingIntent	array	(Optional) The array elements shall be indirect references to dictionaries that adhere to the requirements for **CIP4_HoleMakingIntent**.
CIP4_LayoutIntent	array	(Optional) The array elements shall be indirect references to dictionaries that adhere to the requirements for **CIP4_LayoutIntent**..
CIP4_MediaIntent	array	(Optional) The array elements shall be indirect references to dictionaries that adhere to the requirements for **CIP4_MediaIntent**..

7.9 Production level

The optional **CIP4_Root/CIP4_Production** level contains metadata properties that may be used to parameterize a job ticket or provide additional production information that is not available in **CIP4_Root/CIP4_Intent**.

7.9.1 CIP4_Production

Table 24, **CIP4_Production,** specifies production details.

Table 24 — CIP4_Production

Name	Data Type	Description
Type	name	(Required) The value of Type shall be *CIP4_Production*.
CIP4_CopyCount	integer	(Optional) **CIP4_CopyCount** property shall be a non-zero positive value. The value of this property shall indicate the number of copies requested of a document part. NOTE **CIP4_CopyCount** is typically used in variable data jobs where recipients receive varying amounts of identical instance documents.
CIP4_DescriptiveName	string	(Optional) Human readable description of the production requirements.
CIP4_Resource	array	(Optional) The values of **CIP4_Resource** shall be dictionaries that represent XJDF resources provided in XJDF, Chapter 6 Resources. The mapping of JDF resources to **CIP4_Resource** shall follow the same rules as mapping of XJDF Intent described in 6.2.1 Mapping of the encoding of XJDF Intent. If XJDF provides both Intent resources and matched production resources, the XJDF Intent resources should be specified. This document has no conformance requirements for the use of **CIP4_Resource.**