MIS to Conventional Printing ICS

Version 2.2

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CIP4 ORGANIZATION

CIP4 THANKS ITS PARTNER LEVEL MEMBERS

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1 Introduction

This CIP4 Interface Conformance Specification (ICS) defines the Conformance Requirements for a subset of ▸ [XJDF 2.2] for job tickets to be processed on *Conventional Printing* offset presses. This ICS is designed to represent a job that is suitable for producing *Sheets* on *Sheet Fed* presses. Nonetheless it is also applicable to represent jobs that are produced on *Web Fed* offset presses. In *Web Fed* printing, a *Sheet* defines one rotation of the press cylinder. Specific exceptions for *Web Fed* printing will be called out with a label Web Exception.

This version of the ICS defines two *Conformance Levels*. The first level is suitable for an offset printing *Device* that performs one *Press Run* per *Sheet* or surface. In addition to the *Conformance Requirements* of the first level, the second level defines further requirements for **XJMF**, and for versioned jobs and varnishing.

1.1 Use of ICS Documents

This ICS is a CIP4 *Domain ICS*, specifically intended for the interaction between an *MIS* acting as the *Manager* and a *Sheet Fed Press Controller* acting as the *Worker*.

The correct implementation of this *Domain ICS* requires a common way to present data and to communicate between systems; these are specified in the ▸ [Management Information System ICS] that should always be used in conjunction with this *Domain ICS*.

1.2 Conventions Used in this Specification

Throughout this document a number of formatting and stylistic conventions have been employed that are intended to help the reader. These are intended to align with those of the **XJDF** specification. See ▸ [XJDF 2.2].

1.2.1 Document References

References to other publications are collated in ▸ Appendix A References. Within the text these references use a meaningful short symbolic name that may be clicked to allow the reader to navigate directly to the full description in the appendix. These references use a common text style as described in the following section.

1.2.2 Text Styles

There are a number of text styles that are used to identify the various components of the specification. Some of the text styles support dynamic links; these allow the reader to click on the term and navigate to the definition of the term (if it is locally defined).

- ***NodeInfo*** — A **XJDF** or **XJMF** element. Usually these are dynamic links leading to the definition of the element.
- **Process** — A specific *Process* or *Gray Box* such as **ColorSpaceConversion** or **Rendering**. These can be dynamic links leading to the definition of the *Process*.
- *@Attribute* — A **XJDF** or **XJMF** attribute within the context of an element.
- "Value" — The content of an attribute.
- **XJDF** — **XJDF** or **XJMF** are used when referring to the specification in general rather than elements with the same name.
- *Glossary Item* — The document utilizes some specialist terms; these are defined in ▸ Table 1.3 Glossary and highlighted throughout the document.
- ▸ [XJDF 2.2] — Identifies a reference to an item within this specification (such as a particular table, section etc) or to an entry in the references appendix. These are dynamic links leading to the item itself.
- http://www.CIP4.org — A hyperlink reference to an external item.

1.2.3 XPath Notation

- ***XJDF***/@*JobID* — The document utilizes ▸ [XPath] notation when it is required to define the particular context for an item. It is particularly useful when there is a conditional term relating to the context, e.g. ***XJDF***[@*Type* = "DigitalPrinting"] identifies an **XJDF** *Process* node for digital printing.

1.2.4 Modification Notes

New in ICS 2.2

To help the reader familiar with earlier versions of this ICS, this specification indicates additions and clarifications using the callouts described in ▸ Table 1.1 Modification Notes. Please note that not all changes are identified with modified callout flags. When modification occurs in multiple versions, sometimes only the most recent version is indicated. A few changes have been made globally and are explained in the body of the document and only significant changes have been flagged with callouts, as determined by CIP4 Working Groups.

Table 1.1: Modification Notes

EXAMPLE	CALLOUT MEANING
New in ICS 2.x	New sections, attribute/elements and attribute versions.
Modified in ICS 2.x	Changed syntax or semantics of sections or attributes/elements. Might include clarification as well. Usually there is a modification note describing the change.
Web Exception	Highlights the changed semantics required if the **XJDF** or **XJMF** is applied to *Web Fed* printing.

1.2.4.1 Location of Modification Notes

A callout occurs after one of the following document elements.

- **Section head:** applies to entire section and all subsections and contained tables.
- **Attribute/Element name:** applies to entire row for the designated attribute/element.
- **Attribute value:** applies to attribute value.

1.2.5 Specification of Cardinality

The following table illustrates the notation of *Manager* and *Worker Conformance Requirements* in ICS tables.

If an attribute, attribute value or element is not provided explicitly or implicitly by a table row of <all other values>, it is assumed to be out of scope. An empty cell for a *Conformance Level* specifies that the *Trait* is out of scope for that *Conformance Level*. Out of scope values MAY be written and MAY be processed, but a conforming processor NEED NOT support them. The implied cardinality of out of scope values is therefore w? r?.

Table 1.2: Specification of cardinality (Sheet 1 of 2)

NOTATION	NAME	DESCRIPTION
w	Write Required	When this cardinality indicator is applied to an attribute or element name, the *Trait* SHALL be written by the *Manager* or *Worker*. When this cardinality indicator is applied to an attribute value that is not a list type it specifies the only acceptable value. When this cardinality indicator is applied to an attribute value that is a list type, it specifies that the value SHALL be present in the list.
w?	Write Optional	The element, or attribute, or attribute value MAY be written by the *Manager* or *Worker*. When this cardinality indicator is applied to an attribute value that is a list type, it specifies that the value MAY be present in the list.
w←	Write Conditional	When this cardinality indicator is applied to an attribute or element name, the *Trait* SHALL be written by the *Manager* or *Worker* depending on conditions. The details of the condition will be specified in the description. When this cardinality indicator is applied to an attribute value that is not a list type, it specifies that the value is a valid selection from a list of acceptable values, one of which SHALL be present. When this cardinality indicator is applied to an attribute value that is a list type, it specifies that the value is a valid selection from a list of the values defined in this ICS that have a w←, one or more of which SHALL be present.
w!	Write Forbidden	The element, or attribute, or attribute value SHALL NOT be written by the *Manager* or *Worker*. When this cardinality indicator is applied to an attribute value that is a list type, it specifies that the value SHALL NOT be present in the list.
r	Read Required	The element, or attribute, or attribute value SHALL be read by the *Manager* or *Worker*.

Table 1.2: Specification of cardinality (Sheet 2 of 2)

NOTATION	NAME	DESCRIPTION
r?	Read Optional	The element, or attribute, or attribute value MAY be read by the *Manager* or *Worker*.
r←	Read Conditional	The element, or attribute, or attribute value SHALL be read by the *Manager* or *Worker* depending on conditions. The details of the condition will be specified in the description.

1.2.6 Conformance Terminology

This document uses exactly the same terminology as the **XJDF** specification to indicate the strictness of conformance. See ▸ [XJDF 2.2].

1.3 General Architecture

All transactions in an environment compliant to this ICS document SHALL conform to ▸ [Management Information System ICS].

1.4 Glossary

This section defines terminology used throughout this document. References to other documents are indicated with square brackets, e.g. ▸ [XJDF 2.2].

Table 1.3: Glossary (Sheet 1 of 2)

TERM	DEFINITION
Conformance Level	See ▸ [Management Information System ICS].
Conformance Requirement	See ▸ [Management Information System ICS].
Conventional Printing	Offset printing on either a *Sheet Fed* or a *Web Printing* press.
Device	See ▸ [Management Information System ICS].
Domain ICS	See ▸ [Management Information System ICS].
Gray Box	See ▸ [XJDF 2.2].
Manager	In the context of this ICS, *MIS* is the *Manager*.
MIS	See ▸ [Management Information System ICS].
Operator	See ▸ [Management Information System ICS].
Partition	See ▸ [Management Information System ICS].
Prepress Workflow System	The partner system that communicates with press *Devices* using **XJDF** and **XJMF** elements and can provide all prepress information. A *Prepress Workflow System* may provide only the resource updates if it works together with a *MIS*. If there is only a *Prepress Workflow System* and no *MIS*, then the *Prepress Workflow System* can also play the role of a *MIS*. Then the term *Manager* refers to the *Prepress Workflow System* in this ICS, too.
Press Controller	A *Device* that controls press devices and handles all the communication via **XJDF** and **XJMF**. It typically communicates with a *MIS* and a *Prepress Workflow System*. The term *Worker* refers to the *Press Controller* in this ICS.
Press Run	One run of a *Sheet* through a press. The press consists of modules that are linearly linked to a chain. One run of a *Sheet* through this chain represents one *Press Run*. A *Press Run* is a *Conventional Printing Workstep*.
Process	See ▸ [Management Information System ICS].
Product Intent	See ▸ [XJDF 2.2].

Table 1.3: Glossary (Sheet 2 of 2)

TERM	DEFINITION
Sheet	*Sheets* are press sheets which may be comprised of multiple folding signatures and might also have "recto" and "verso" forms for identification of orientation through the press (facing up versus facing down at the feeder). The term "cut sheet" refers to an individual *Sheet*, typically in a phrase, such as "separately cut *Sheets* of an opaque material". The term "Sheet-Fed" is used to describe a press that consumes cut *Sheets*, typically in the phrase "Sheet-Fed Press".
Sheet Fed	Refers to a specific *Process*, Machine or *Device* where by individual *Sheets* are fed into a press which consists of one or more stations, each responsible for laying down a single separation or color.
Trait	See ▸ [Management Information System ICS].
Web Fed	Refers to a specific *Process*, Machine or *Device* where a continuous roll of media is fed into a press which consists of one or more stations each responsible for a laying down a single separation or color.
Worker	See ▸ [Management Information System ICS].
Workstep	See ▸ [Management Information System ICS].

2 Conformance

2.1 Conformance Levels

This ICS defines two *Conformance Levels*, namely Levels 1, and 2, for defining a *Conventional Printing* **XJDF** instance. ▸ Table 2.1 Conformance Levels briefly describes the levels of conformance defined by this ICS.

In order to be conformant to a level of this ICS specified in the first column of ▸ Table 2.1 Conformance Levels, an *MIS* acting as a *Manager* SHALL conform to the *Manager* part; a *Device* acting as a *Worker* (in a *Conventional Press Controller* for an *Offset Printing Press*) SHALL conform to the *Worker* part of this ICS. In addition the *Manager* or *Worker* SHALL conform to the level of the ▸ [Management Information System ICS] specified in the second column of ▸ Table 2.1 Conformance Levels.

- See ▸ [Management Information System ICS].

Table 2.1: Conformance Levels

LEVEL OF THIS ICS	LEVEL OF MIS ICS	DESCRIPTION
1	1	This ICS level defines simple job submission including support for one or more simple *Press Runs* and simple varnishing.
2	2	This ICS level adds versioning, complex varnishing, inventory (lot) tracking and separation splitting of *Press Runs* in addition to the features introduced by the ▸ [Management Information System ICS] level 2.

3 XJDF Instance

This ICS specifies the **XJDF** elements that are specific to the **ConventionalPrinting** *Process*. This includes details for *Device* selection, ink zone presetting and varnishing.

3.1 XJDF

This section specifies the *Conformance Requirements* for attributes and elements of an **XJDF** node.

There are different *Conformance Requirements* for an **XJDF** sent by a *Manager* and one returned by a *Worker* as detailed in the following tables.

3.1.1 XJDF sent by a Manager

Table 3.1: XJDF Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL		WORKER LEVEL		DESCRIPTION
	1	2	1	2	
DescriptiveName	w?	w?	r	r	See ▸ [Management Information System ICS].
ICSVersions	w	w	r?	r?	See ▸ [Management Information System ICS].
MIS-CP_L1-2.2	w	w!	r?		Specifies conformance to the *MIS* to *Conventional Printing* ICS *Conformance Level* 1.
MIS-CP_L2-2.2	w!	w		r?	Specifies conformance to the *MIS* to *Conventional Printing* ICS *Conformance Level* 2.
<all other values>	w←	w←	r?	r?	@*ICSVersions* SHALL contain all the values specified in the ICS documents that are required for conformance to this ICS as specified in ▸ Table 2.1 Conformance Levels.
JobID	w	w	r	r	See ▸ [Management Information System ICS].
JobPartID	w?	w?	r	r	See ▸ [Management Information System ICS].
Types	w	w	r	r	See ▸ [Management Information System ICS].
ConventionalPrinting	w	w	r	r	"ConventionalPrinting" SHALL be specified. If a pure **Varnishing** process is requested, ***ColorantControl***/@*ColorantOrder* SHALL contain only the names of the varnish separations.
InkZoneCalculation	w?	w?	r	r	If present, "InkZoneCalculation" SHALL be provided before "ConventionalPrinting".
Varnishing	w?	w?	r	r	@*Types* SHALL specify "Varnishing" if the **Varnishing** process is required. For *Conformance Level* 1, @*Types* SHALL NOT be specified with more than one instance of "Varnishing"; it SHALL be the last process in the @*Types* list. For *Conformance Level* 2, @*Types* MAY be specified with multiple instances of "Varnishing"; they MAY precede "ConventionalPrinting" in the @*Types* list (e.g., to describe the application of a primer).
<all other values>	w!	w!			
Version	w	w	r?	r?	See ▸ [Management Information System ICS].

Table 3.1: XJDF Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AuditPool	w	w	r?	r?	See ▸ [Management Information System ICS].
ResourceSet[@*Name* = "Color" and @*Usage* = "Input"]	w	w	r?	r?	The ***Color*** resource SHALL contain details of each colorant and varnish that is printed.
ResourceSet[@*Name* = "ColorantControl" and @*Usage* = "Input"]	w	w	r	r	The ***ColorantControl*** resource SHALL contain the print order of all colorants and varnishes that are printed in one *Press Run*.
ResourceSet[@*Name* = "Component" and @*Usage* = "Input"]	w	w	r	r	The input ***Component*** SHALL specify the printing material that will be printed.
ResourceSet[@*Name* = "Component" and @*Usage* = "Output"]	w	w	r	r	The output ***Component*** SHALL specify the printed material.
ResourceSet[@*Name* = "ConventionalPrintingParams" and @*Usage* = "Input"]	w	w	r	r	The ***ConventionalPrintingParams*** resource SHALL specify the setup of the press.
ResourceSet[@*Name* = "Device" and @*Usage* = "Input"]	w?	w?	r?	r?	See ▸ [Management Information System ICS].
ResourceSet[@*Name* = "ExposedMedia" and @*Usage* = "Input"]	w	w	r	r	The ***ExposedMedia*** resource SHALL specify the plates and/or sleeves used for printing and varnishing.
ResourceSet[@*Name* = "Ink" and @*Usage* = "Input"]	w?	w?	r?	r?	The ***Ink*** resource SHOULD specify the physical characteristics of each colorant and varnish that is printed.
ResourceSet[@*Name* = "Media" and ***Media***@*MediaType* = ["Blanket" or "Plate"]	w	w	r?	r?	***Media*** resources SHALL specify the type and physical properties of plates and/or sleeves used for printing and varnishing.
ResourceSet[@*Name* = "Media" and ***Media***@*MediaType* = "Paper"	w	w	r?	r?	***Media*** resources SHALL specify the type and physical properties of the input ***Component*** that will be printed.
ResourceSet[@*Name* = "NodeInfo" and @*Usage* = "Input"]	w	w	r?	r?	See ▸ [Management Information System ICS].
ResourceSet[@*Name* = "Preview" and @*Usage* = "Input"]	w←	w←	r?	r?	The ***Preview*** resource SHALL be specified if @*Types* contains "InkZoneCalculation", and SHALL specify the separation previews.
ResourceSet[@*Name* = "VarnishingParams" and @*Usage* = "Input"]	w←	w←	r	r	The ***VarnishingParams*** resource SHALL provide details of varnishing and SHALL be specified if @*Types* contains "Varnishing".

3.1.2 XJDF returned by a Worker

Table 3.2: XJDF Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ICSVersions	r?	r?	w	w	See ▸ [Management Information System ICS].
MIS-CP_L1-2.2	r?		w	w!	Specifies conformance to the *MIS* to *Conventional Printing* ICS *Conformance Level* 1.
MIS-CP_L2-2.2		r?	w!	w	Specifies conformance to the *MIS* to *Conventional Printing* ICS *Conformance Level* 2.
<all other values>	r?	r?	w←	w←	@*ICSVersions* SHALL contain all the values specified in the ICS documents that are required for conformance to this ICS as specified in ▸ Table 2.1 Conformance Levels.
JobID	r	r	w	w	See ▸ [Management Information System ICS].
JobPartID	r	r	w?	w?	See ▸ [Management Information System ICS].
Types	r	r	w	w	See ▸ [Management Information System ICS].
Version	r?	r?	w	w	See ▸ [Management Information System ICS].
AuditPool	r?	r?	w	w	See ▸ [Management Information System ICS].
ResourceSet[@*Name* = "Component" and @*Usage* = "Input"]	r	r	w?	w?	***ResourceSet Component*** SHOULD be specified for reporting the amount of good and waste *Sheets* produced.
ResourceSet[@*Name* = "Component" and @*Usage* = "Output"]	r	r	w	w	***ResourceSet Component*** SHALL be specified for reporting the amount of ***Media*** consumed for good and waste production.
ResourceSet[@*Name* = "Ink" and @*Usage* = "Input"]	r?	r?	w?	w?	***Ink*** may be supplied for reporting the amount of ***Ink*** consumed for good and waste production.
ResourceSet[@*Name* = "NodeInfo" and @*Usage* = "Output"]	r	r	w	w	See ▸ [Management Information System ICS].

3.2 AuditPool

3.2.1 AuditPool sent by a Manager

AuditPool has no additional *Conformance Requirements*. See ▸ [Management Information System ICS].

3.2.2 AuditPool returned by a Worker

AuditPool elements contain the recorded results of a *Press Run*.
Note: The conformance requirements for ***AuditPool*** and its children are identical to those outlined in the ▸ [Management Information System ICS] except for the conformance requirement for ***Part*** elements which reflect the standardized partition structure of *Press Runs*.

Table 3.3: AuditPool Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AuditNotification	r	r	w←	w←	See ▸ [Management Information System ICS].

Table 3.3: AuditPool Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AuditProcessRun	r	r	w	w	See ▸ [Management Information System ICS].
AuditResource	r	r	w	w	See ▸ [Management Information System ICS].
AuditStatus	r	r	w	w	***AuditStatus*** SHALL be specified for each unique combination of ***DeviceInfo***/@*Status* and ***DeviceInfo***/@*StatusDetails* or ***DeviceInfo***/***JobPhase***/@*Status* and ***DeviceInfo***/***JobPhase***/@*StatusDetails*

3.2.2.1 AuditNotification

AuditNotification has no additional *Conformance Requirements*. See ▸ [Management Information System ICS].

3.2.2.2 AuditProcessRun

AuditProcessRun summarizes the execution of one or more *Press Runs*. Exactly one ***AuditProcessRun*** SHALL be provided in an **XJDF** returned by the *Worker*.

Table 3.4: AuditProcessRun Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Header	r?	r?	w	w	See ▸ [Management Information System ICS].
ProcessRun	r	r	w	w	See ▸ [Management Information System ICS].

3.2.2.2.1 ProcessRun

ProcessRun has no additional *Conformance Requirements* except for the specific details of *Press Run* specified in ***Part***.

Table 3.5: ProcessRun Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Part	r	r	w←	w←	***Part*** SHALL be specified and SHALL represent the *Press Run*. See ▸ Table 5.70 NodeInfo Part Element returned by a Worker.

3.2.2.3 AuditResource

Table 3.6: AuditResource Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Header	r?	r?	w	w	See ▸ [Management Information System ICS].
ResourceInfo	r	r	w	w	See ▸ [Management Information System ICS].

3.2.2.4 AuditStatus

Table 3.7: AuditStatus Element

NAME OR VALUE	MANAGER LEVEL		WORKER LEVEL		DESCRIPTION
	1	2	1	2	
Header	r?	r?	w	w	See ▸ [Management Information System ICS].
DeviceInfo	r	r	w	w	See ▸ [Management Information System ICS].

4 XJMF Message

This chapter discusses the *Conformance Requirements* for **XJMF** messages.

4.1 Message Types

The following table specifies the *Conformance Requirements* for message types that *Managers* and *Workers* SHALL support. The specific details of the *Conformance Requirements* for each message type is described later in this chapter.

Managers and *Workers* SHALL support all message types required by the ▸ [Management Information System ICS] and MAY support other message types, if so they SHALL conform to the *Conformance Requirements* of those message types.

Table 4.1: XJMF Message Types

MESSAGE TYPE	MESSAGE FAMILY	MANAGER		WORKER		DESCRIPTION
		1	2	1	2	
Resource	***QueryResource***	w	w	r	r	See ▸ [Management Information System ICS].
	ResponseResource	r	r	w	w	
	SignalResource	r	r	w	w	
Status	***QueryStatus***	w	w	r	r	See ▸ [Management Information System ICS].
	ResponseStatus	r	r	w	w	
	SignalStatus	r	r	w	w	

4.2 XJMF

The **XJMF** root element is considered a container that SHALL contain one or more specific **XJMF** messages. These messages provide more detailed information or instructions. The following table contains the *Conformance Requirements* for the **XJMF** element that is the root node of any **XJMF** message.

Table 4.2: XJMF Element

NAME OR VALUE	MANAGER LEVEL		WORKER LEVEL		DESCRIPTION
	1	2	1	2	
ICSVersions	w r?	w r?	r? w	r? w	See ▸ [Management Information System ICS].
MIS-CP_L1-2.2	w r?	w!	r? w	 w!	Specifies conformance to the *MIS* to *Conventional Printing* ICS *Conformance Level* 1.
MIS-CP_L2-2.2	w!	w r?	 w!	r? w	Specifies conformance to the *MIS* to *Conventional Printing* ICS *Conformance Level* 2.
<all other values>	w← r?	w← r?	r? w←	r? w←	@*ICSVersions* SHALL contain all the values specified in the ICS documents that are required for conformance to this ICS as specified in ▸ Table 2.1 Conformance Levels.
Version	w r?	w r?	r? w	r? w	See ▸ [Management Information System ICS].

Table 4.2: XJMF Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
2.2	w r	w r	r w	r w	
Header	w r?	w r?	r? w	r? w	See ▸ [Management Information System ICS].
<message element>	w r	w r	r w	r w	At least one message element SHALL be specified; multiple message elements MAY be specified.

4.2.1 Header

The ***Header*** provides information about the sender of an audit, message or **XJMF**.

Table 4.3: XJMF Header Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AgentName	w r?	w r?	r? w	r? w	See ▸ [Management Information System ICS].
AgentVersion	w r?	w r?	r? w	r? w	See ▸ [Management Information System ICS].
DeviceID	w r?	w r?	r? w	r? w	See ▸ [Management Information System ICS].
Time	w r?	w r?	r? w	r? w	See ▸ [Management Information System ICS].
ICSVersions	w r?	w r?	r? w	r? w	The *Manager* SHALL supply a set of NMTOKEN values, one for each ICS with which the **XJMF** instance complies.
MIS-CP_L1-2.2	w r?		r? w		Specifies conformance to the *MIS* to *Conventional Printing* ICS *Conformance Level* 1.
MIS-CP_L2-2.2		w r?		r? w	Specifies conformance to the *MIS* to *Conventional Printing* ICS *Conformance Level* 2.

4.3 Resource

Resource messages publish information about the resource usage of a *Worker*. This ICS requires support for consumption of printing substrate and production of printed *Sheets*. Additional types of ***Resource*** consumption MAY be provided but are out of scope for this ICS.

4.3.1 QueryResource

QueryResource SHALL be sent from the *Manager* to a *Worker* to subscribe to asynchronous signal resource messages containing *Worker's* resource usage. This ICS has no requirements for resource synchronization.

Table 4.4: QueryResource Message

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Header		w		r	See ▸ [Management Information System ICS].
ResourceQuParams		w		r	See ▸ [Management Information System ICS].
Subscription		w		r	See ▸ [Management Information System ICS].

4.3.1.1 ResourceQuParams

ResourceQuParams specifies details of the signal resource messages sent by the *Worker*.

Table 4.5: QueryResource ResourceQuParams Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Scope		w		r	See ▸ [Management Information System ICS].

4.3.2 ResponseResource

ResponseResource is a synchronous response to the ***QueryResource*** message that SHALL be sent from the *Worker* to the *Manager*. The response message SHALL contain the success response code if the subscription was successful. If the subscription was unsuccessful, the error details SHALL be provided.

Table 4.6: ResponseResource Message

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ReturnCode		r		w	See ▸ [Management Information System ICS].
Header		r		w	See ▸ [Management Information System ICS].
Notification		r		w←	See ▸ [Management Information System ICS].
ResourceInfo		r		w	See ▸ [Management Information System ICS].

4.3.3 SignalResource

SignalResource messages SHALL be sent from the *Worker* to the *Manager's* endpoint URL (***Subscription***/@*URL*) to notify the *Manager* about the *Worker's* resource usage. ***SignalResource*** messages SHALL be sent immediately when a job has been finished and returned to the *Manager*.

Table 4.7: SignalResource Message

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ChannelMode		r		w	See ▸ [Management Information System ICS].
Header		r		w	See ▸ [Management Information System ICS].
ResourceInfo		r		w	See ▸ [Management Information System ICS].

4.4 Status

The ***Status*** message queries the general status of a *Worker* and the status of jobs associated with a *Worker*.

4.4.1 QueryStatus

QueryStatus SHALL be sent from the *Manager* to a *Worker* to synchronously query the *Worker's* status, or to subscribe to asynchronous ***SignalStatus*** messages.

Table 4.8: QueryStatus Message

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Header	w	w	r	r	See ▸ [Management Information System ICS].
StatusQuParams	w?	w←	r	r	See ▸ [Management Information System ICS].
Subscription		w←		r	See ▸ [Management Information System ICS].

4.4.1.1 StatusQuParams

StatusQuParams has no additional *Conformance Requirements*. See ▸ [Management Information System ICS].

4.4.2 ResponseStatus

ResponseStatus has no additional *Conformance Requirements* except for the specific details of *Press Run* specified in ***Part***.

Table 4.9: ResponseStatus Message

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ReturnCode	r	r	w	w	See ▸ [Management Information System ICS].
DeviceInfo	r	r	w←	w←	See ▸ [Management Information System ICS].
Header	r	r	w	w	See ▸ [Management Information System ICS].
Notification	r	r	w←	w←	See ▸ [Management Information System ICS].

4.4.3 SignalStatus

See ▸ [Management Information System ICS].

Figure 4-1: SignalStatus Interaction Between Manager and Worker

<TBD Figure required

Table 4.10: SignalStatus Message

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ChannelMode	r	r	w	w	See ▸ [Management Information System ICS].
DeviceInfo	r	r	w	w	See ▸ [Management Information System ICS].
Header	r	r	w	w	See ▸ [Management Information System ICS].

5 Resources

5.1 Color

5.1.1 ResourceSet

Table 5.1: Color ResourceSet Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	w	w	r	r	See ▸ [XJDF 2.2].
Color	w	w	r	r	
Usage	w	w	r	r	See ▸ [XJDF 2.2].
Input	w	w	r	r	
Resource (Color)	w	w	r	r	See ▸ [XJDF 2.2].

5.1.2 Resource

Table 5.2: Color Resource Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool	w!	w!			See ▸ [XJDF 2.2].
Color	w	w	r	r	See ▸ [XJDF 2.2].
Part	w	w	r	r	See ▸ [XJDF 2.2].

5.1.3 Color

Table 5.3: Color Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ActualColorName	w←	w←	r	r	@*ActualColorName*, defaults to the value of ***Part***@*Separation*. @*ActualColorName* SHALL be specified if the actual name of the print color is known. If the actual name of the print color has the same value as ***Part***@*Separation*, the *Manager* SHALL provide @*ActualColorName* to indicate to the *Worker* that the *MIS* or *Prepress Workflow System* has confirmed the actual name of the print color. If multiple identical colorants are intended to be placed on the same surface, multiple ***Color*** elements with a different ***Part***/@*Separation* but the same @*ActualColorName* SHALL be specified.
CMYK	w←	w←	r	r	@*CMYK* SHALL be specified if the color is a standard *Process* colorant. In other words, if CMYK would have one of the following values: 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 For example, a black text plate can be defined with @*Separation* = "Text" and @*CMYK* = "0 0 0 1".

5.1.4 Part

Table 5.4: Color Part Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Separation	w	w	r	r	See ▸ [XJDF 2.2].
SheetName	w?	w?	r	r	@*SheetName* SHOULD NOT be specified unless the visual characteristics of a ***Color*** vary for different *Sheets*.
Side	w?	w?	r	r	@*Side* SHOULD NOT be specified unless the visual characteristics of a ***Color*** vary for different surfaces.
<all other attributes>	w!	w!			

5.2 ColorantControl

5.2.1 ResourceSet

Table 5.5: ColorantControl ResourceSet Element (Sheet 1 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	w	w	r	r	See ▸ [XJDF 2.2].

Table 5.5: ColorantControl ResourceSet Element (Sheet 2 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ColorantControl	w	w	r	r	
Usage	w	w	r	r	See ▸ [XJDF 2.2].
Input	w	w	r	r	
Resource (ColorantControl)	w	w	r	r	See ▸ [XJDF 2.2].

5.2.2 Resource

Table 5.6: ColorantControl Resource Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool	w!	w!			See ▸ [XJDF 2.2].
ColorantControl	w	w	r	r	See ▸ [XJDF 2.2].
Part	w?	w?	r	r	See ▸ [XJDF 2.2].

5.2.3 ColorantControl

Table 5.7: ColorantControl Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ColorantOrder	w?	w?	r	r	@*ColorantOrder* SHALL specify the names of all colorants including varnishes in the order that they are intended to be printed on a surface in a single *Press Run*. @*ColorantOrder* SHALL NOT contain any values that are not present in @*ColorantParams*.
ColorantParams	w	w	r	r	@*ColorantParams* SHALL specify the complete list of colorants, including varnishes, used in all *Press Runs* for one surface. If the *Manager* doesn't know the names of spot colors, then generic values such as "Spot1", "Spot2" MAY be specified. All values SHALL match an existing value of ***Part***/@*Separation* in ***ResourceSet***[@*Name* = "Color"]. The *Manager* SHOULD NOT designate the four process colors, (Cyan, Magenta, Yellow and Black) with a generic value.

5.2.4 Part

Table 5.8: Part Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
SheetName	w?	w?	r	r	See ▸ [XJDF 2.2].
Side	w?	w?	r	r	See ▸ [XJDF 2.2].

Table 5.8: Part Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
<all other attributes>	w!	w!			

5.3 Component

5.3.1 Component Input Resource

5.3.1.1 Component Input Resource sent by a Manager

5.3.1.1.1 ResourceSet

Table 5.9: Input Component ResourceSet Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	w	w	r	r	See ▸ [XJDF 2.2].
Component	w	w	r	r	
Unit Web Exception	w←	w←	r	r	See ▸ [Management Information System ICS]. **Web Exception:** @*Unit* MAY be omitted if the value is 'count'.
count	w←	w←	r	r	See ▸ [Management Information System ICS].
m	w←	w←	r	r	**Web Exception:** @Unit with a value of 'm' SHALL be supplied if the component is not measured in 'count'.
<all other values>	w!	w!			
Usage	w	w	r	r	See ▸ [XJDF 2.2].
Input	w	w	r	r	
Resource (Component)	w	w	r	r	See ▸ [XJDF 2.2].

5.3.1.1.2 Resource

Table 5.10: Input Component Resource Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool	w?	w?	r	r	This ***AmountPool*** SHALL specify the planned amounts of ***Component*** that SHALL be consumed by the *Worker*. See ▸ Table 5.18 Output Component Resource Element sent by a Manager for the planned production amounts.
Component	w	w	r	r	See ▸ [XJDF 2.2].
Part	w	w	r	r	See ▸ [XJDF 2.2].

5.3.1.1.3 Component

Table 5.11: Input Component Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Dimensions	w	w	r	r	**Note:** @*Dimensions* is a 'shape' data type specifying x, y & z - width, height and thickness. A non-zero value of thickness SHALL be the same as the value of ***Media***/@*Thickness*, where ***Media*** is referenced by @*MediaRef*. A value of "0" SHALL be specified if the actual value is unknown.
MediaRef	w	w	r	r	See ▸ [XJDF 2.2].

5.3.1.1.4 Part

Table 5.12: Input Component Part Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
PartVersion	w!	w←		r	***Part*** SHALL specify @*PartVersion* for jobs that are versioned.
SheetName	w	w	r	r	See ▸ [XJDF 2.2].
WebName Web Exception	w?	w?	r?	r?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.
<all other attributes>	w!	w!			

5.3.1.2 Component Input Resource returned by a Worker

5.3.1.2.1 ResourceSet

Table 5.13: Input Component ResourceSet Element returned by a Worker (Sheet 1 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	r	r	w	w	See ▸ [XJDF 2.2].
Component	r	r	w	w	
Unit Web Exception	r	r	w←	w←	See ▸ [Management Information System ICS]. **Web Exception:** @*Unit* MAY be omitted if the value is 'count'.
count	r	r	w←	w←	See ▸ [Management Information System ICS].
m	r	r	w←	w←	**Web Exception:** @*Unit* with a value of 'm' SHALL be supplied if the component is not measured in 'count'.
<all other values>			w!	w!	
Usage	r	r	w	w	See ▸ [XJDF 2.2].
Input	r	r	w	w	

Table 5.13: Input Component ResourceSet Element returned by a Worker (Sheet 2 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Resource (Component)	r	r	w	w	See ▸ [XJDF 2.2].

5.3.1.2.2 Resource

Table 5.14: Input Component Resource Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool	r	r	w?	w?	This ***AmountPool*** SHALL specify the actual amounts of ***Component*** that were consumed by the *Worker*.
Component	r	r	w	w	See ▸ [XJDF 2.2].
Part	r	r	w	w	See ▸ [XJDF 2.2].

5.3.1.2.3 Component

Table 5.15: Input Component Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Dimensions	r	r	w	w	**Note:** @*Dimensions* is a 'shape' data type specifying x, y & z - width, height and thickness. The value of thickness SHALL be the same as the value of ***Media***/@*Thickness*, where ***Media*** is referenced by @*MediaRef*. A value of "0" SHALL be specified if the actual value is unknown.
MediaRef	r	r	w	w	See ▸ [XJDF 2.2].

5.3.1.2.4 Part

Table 5.16: Input Part Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
LotID		r		w?	See ▸ [XJDF 2.2].
PartVersion		r	w!	w←	***Part*** SHALL specify @*PartVersion* for jobs that are versioned.
SheetName	r	r	w	w	See ▸ [XJDF 2.2].
WebName Web Exception	r?	r?	w?	w?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.
<all other attributes>			w!	w!	

5.3.2 Component Output Resource

5.3.2.1 Component Output Resource sent by a Manager

5.3.2.1.1 ResourceSet

Table 5.17: Output Component ResourceSet Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	w	w	r	r	See ▸ [XJDF 2.2].
Component	w	w	r	r	
Unit Web Exception	w←	w←	r	r	See ▸ [Management Information System ICS]. **Web Exception:** @*Unit* MAY be omitted if the value is 'count'.
count	w←	w←	r	r	See ▸ [Management Information System ICS].
m	w←	w←	r	r	**Web Exception:** @*Unit* with a value of 'm' SHALL be supplied if the component is not measured in 'count'.
<all other values>	w!	w!			
Usage	w	w	r	r	See ▸ [XJDF 2.2].
Output	w	w	r	r	
Resource (Component)	w	w	r	r	See ▸ [XJDF 2.2].

5.3.2.1.2 Resource

Table 5.18: Output Component Resource Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool	w	w	r	r	This ***AmountPool*** SHALL specify the planned amounts of ***Component*** that SHALL be produced by the *Worker*.
Component	w	w	r	r	See ▸ [XJDF 2.2].
Part	w	w	r	r	See ▸ [XJDF 2.2].

5.3.2.1.3 AmountPool

Table 5.19: AmountPool Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
PartAmount	w	w	r	r	See ▸ [XJDF 2.2].

5.3.2.1.3.1 PartAmount

Table 5.20: PartAmount Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Amount	w	w	r	r	@*Amount* SHALL specify the planned amount of good production. See also ▸ [Management Information System ICS].
Waste		w?		r	@*Waste* SHALL specify the maximum planned amount of waste production.
Part	w?	w?	r	r	***Part*** MAY be specified to enable tracking of individual *Press Runs*.

5.3.2.1.3.2 Part

Table 5.21: PartAmount/Part Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
LotID		w←		r	@*LotID* SHALL be specified if individual pallets or reels need to be tracked. At least one of @*LotID*, @*Separation* or @*Side* SHALL be specified.
Separation		w←		r	@*Separation* SHALL be specified if multiple *Press Runs* are required for the same surface. At least one of @*LotID*, @*Separation* or @*Side* SHALL be specified.
Side	w←	w←	r	r	@*Side* SHALL be specified if multiple press runs are required for the same sheet, for instance when printing duplex on a non-perfecting press. At least one of @*LotID*, @*Separation* or @*Side* SHALL be specified.
<all other attributes>	w!	w!			

5.3.2.1.4 Component

Table 5.22: Output Component Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Dimensions	w	w	r	r	**Note:** @*Dimensions* is a 'shape' data type specifying x, y & z - width, height and thickness. A non-zero value of thickness SHALL be the same as the value of ***Media***/@*Thickness*, where ***Media*** is referenced by @*MediaRef*. A value of "0" SHALL be specified if the actual value is unknown.
MediaRef	w	w	r	r	See ▸ [XJDF 2.2].

5.3.2.1.5 Part

Table 5.23: Output Component Part Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
PartVersion	w!	w←		r	@*PartVersion* SHALL be specified for jobs that are versioned.
SheetName	w	w	r	r	See ▸ [XJDF 2.2].
WebName Web Exception	w?	w?	r?	r?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.
<all other attributes>	w!	w!			

5.3.2.2 Component Output Resource returned by a Worker

5.3.2.2.1 ResourceSet

Table 5.24: Output Component ResourceSet Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	r	r	w	w	See ▸ [XJDF 2.2].
Component	r	r	w	w	
Unit Web Exception	r	r	w←	w←	See ▸ [Management Information System ICS]. **Web Exception:** @*Unit* MAY be omitted if the value is 'count'.
count	r	r	w←	w←	See ▸ [Management Information System ICS].
m	r	r	w←	w←	**Web Exception:** @Unit with a value of 'm' SHALL be supplied if the component is not measured in 'count'.
<all other values>			w!	w!	
Usage	r	r	w	w	See ▸ [XJDF 2.2].
Output	r	r	w	w	
Resource (Component)	r	r	w	w	See ▸ [XJDF 2.2].

5.3.2.2.2 Resource

Table 5.25: Output Component Resource Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool	r	r	w	w	See ▸ [XJDF 2.2].
Component	r	r	w	w	See ▸ [XJDF 2.2].
Part	r	r	w	w	See ▸ [XJDF 2.2].

5.3.2.2.3 AmountPool

Table 5.26: AmountPool Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
PartAmount	r	r	w	w	See ▸ [XJDF 2.2].

5.3.2.2.3.1 PartAmount

Table 5.27: PartAmount Element sent by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Amount	r	r	w	w	@*Amount* SHALL specify the actual amount of good production. See also ▸ [Management Information System ICS].
Waste		r		w	@*Waste* SHALL specify the actual amount of waste production.
Part	r	r	w?	w?	***Part*** MAY be specified to enable tracking of individual *Press Runs*.

5.3.2.2.4 Component

Table 5.28: Output Component Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Dimensions	r	r	w	w	**Note:** @*Dimensions* is a 'shape' data type specifying x, y & z - width, height and thickness. A non-zero value of thickness SHALL be the same as the value of ***Media***/@*Thickness*, where ***Media*** is referenced by @*MediaRef*. A value of "0" SHALL be specified if the actual value is unknown.
MediaRef	r	r	w	w	See ▸ [XJDF 2.2].

5.3.2.2.5 Part

Table 5.29: Output Component Part Element returned by a Worker (Sheet 1 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
PartVersion		r	w!	w←	@*PartVersion* SHALL be specified for jobs that are versioned.
SheetName	r	r	w	w	See ▸ [XJDF 2.2].
WebName Web Exception	w?	w?	r?	r?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.

Table 5.29: Output Component Part Element returned by a Worker (Sheet 2 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
<all other attributes>			w!	w!	

5.4 ConventionalPrintingParams

5.4.1 ResourceSet

Table 5.30: ConventionalPrintingParams ResourceSet Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	w	w	r	r	See ▸ [XJDF 2.2].
ConventionalPrintingParams	w	w	r	r	
Usage	w	w	r	r	See ▸ [XJDF 2.2].
Input	w	w	r	r	
Resource (ConventionalPrintingParams)	w	w	r	r	See ▸ [XJDF 2.2].

5.4.2 Resource

Table 5.31: ConventionalPrintingParams Resource Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool	w!	w!			See ▸ [XJDF 2.2].
ConventionalPrintingParams	w?	w?	r	r	See ▸ [XJDF 2.2].
Part	w	w	r	r	See ▸ [XJDF 2.2].

5.4.3 ConventionalPrintingParams

Table 5.32: ConventionalPrintingParams Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
SheetLay		w?		r	See ▸ [XJDF 2.2].
WorkStyle Web Exception	w	w	r	r	See ▸ [XJDF 2.2]. **Web Exception:** For *Web Fed* printing either Simplex or WorkAndBack SHALL be specified.

5.4.4 Part

Table 5.33: ConventionalPrintingParams Part Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
SheetName	w?	w?	r	r	See ▸ [XJDF 2.2].
<all other attributes>	w!	w!			

5.5 Device

Device describes the physical properties of the main *Device* that SHALL execute an **XJDF** *Process*.

5.5.1 ResourceSet

Table 5.34: Device ResourceSet Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	w	w	r	r	See ▸ [Management Information System ICS].
Device	w	w	r	r	
Usage	w	w	r	r	See ▸ [Management Information System ICS].
Input	w	w	r	r	
Resource (Device)	w	w	r	r	See ▸ [Management Information System ICS].

5.5.2 Resource

Table 5.35: Device Resource Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool	w!	w!			See ▸ [XJDF 2.2].
Device	w	w	r	r	See ▸ [Management Information System ICS].
Part	w?	w?	r	r	See ▸ [Management Information System ICS].

5.5.3 Device

Device has no additional *Conformance Requirements*. See ▸ [Management Information System ICS].

5.5.4 Part

Table 5.36: Device Part Element

NAME OR VALUE	MANAGER LEVEL		WORKER LEVEL		DESCRIPTION
	1	2	1	2	
PartVersion	w!	w?		r	@*PartVersion* MAY be specified if alternate versions of a *Sheet* are to be printed on different presses.
Separation	w!	w?		r	@*Separation* MAY be specified if the colors of a *Sheet* are to be printed on different presses.
SheetName	w?	w?	r	r	@*SheetName* SHALL be specified if different *Sheet* name parts are to be printed on different presses, or if @*Side* is specified in this element.
Side	w?	w?	r	r	@*Side* SHALL be specified if the side of a *Sheet* are to be printed on different presses.
<all other attributes>	w!	w!			

5.6 ExposedMedia

5.6.1 ResourceSet

Table 5.37: ExposedMedia ResourceSet Element

NAME OR VALUE	MANAGER LEVEL		WORKER LEVEL		DESCRIPTION
	1	2	1	2	
Name	w	w	r	r	See ▸ [XJDF 2.2].
ExposedMedia	w	w	r	r	
Usage	w	w	r	r	See ▸ [XJDF 2.2].
Input	w	w	r	r	
Resource (ExposedMedia)	w	w	r	r	See ▸ [XJDF 2.2].

5.6.2 Resource

Table 5.38: ExposedMedia Resource Element

NAME OR VALUE	MANAGER LEVEL		WORKER LEVEL		DESCRIPTION
	1	2	1	2	
ExposedMedia	w	w	r	r	See ▸ [XJDF 2.2].
Part	w	w	r	r	See ▸ [XJDF 2.2].

5.6.3 ExposedMedia

Table 5.39: ExposedMedia Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
MediaRef	w	w	r	r	@*MediaRef* SHALL reference a plate/blanket ***Media*** resource.

5.6.4 Part

Table 5.40: ExposedMedia Part Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
PartVersion	w!	w←		r	@*PartVersion* SHALL be specified for versioned jobs.
Separation	w	w	r	r	See ▸ [XJDF 2.2].
SheetName	w	w	r	r	See ▸ [XJDF 2.2].
Side	w	w	r	r	@*Side* SHALL be specified for jobs with one set of plated used for both surfaces, i.e., "WorkandTurn", "WorkAndTumble" and "Simplex". In these cases @*Side* ="Front" SHALL be specified.
WebName Web Exception	w?	w?	r?	r?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.
<all other attributes>	w!	w!			

5.7 Ink

5.7.1 Ink sent by a Manager

5.7.1.1 ResourceSet

Table 5.41: Ink ResourceSet Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name		w		r	See ▸ [XJDF 2.2].
Ink		w		r	
Usage		w		r	See ▸ [XJDF 2.2].
Input		w		r	
Resource (*Ink*)		w		r	See ▸ [XJDF 2.2].

5.7.1.2 Resource

Table 5.42: Ink Resource Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool		w!			See ▸ [XJDF 2.2].
Ink		w		r	See ▸ [XJDF 2.2].
Part		w		r	The *Manager* SHALL specify one ***Part*** for each separation that uses the same ***Ink***.

5.7.1.3 Ink

Table 5.43: Ink Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
InkType		w		r	See ▸ [XJDF 2.2].

5.7.1.4 Part

Table 5.44: Ink Part Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Separation		w		r	See ▸ [XJDF 2.2].
SheetName		w?		r	See ▸ [XJDF 2.2].
Side		w?		r	See ▸ [XJDF 2.2].
WebName Web Exception		w?		r?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.
<all other attributes>		w!			

5.7.2 Ink returned by a Worker

5.7.2.1 ResourceSet

Table 5.45: Ink ResourceSet Element returned by a Worker (Sheet 1 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name		r		w	See ▸ [XJDF 2.2].
Ink		r		w	
Unit		r		w	See ▸ [XJDF 2.2].

Table 5.45: Ink ResourceSet Element returned by a Worker (Sheet 2 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
g		r		w←	
l		r		w←	
<all other values>		r		w!	
Usage		r		w	See ▸ [XJDF 2.2].
Input		r		w	
Resource (*Ink*)		r		w	See ▸ [XJDF 2.2].

5.7.2.2 Resource

Table 5.46: Ink Resource Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool		r		w←	If the *Worker* is capable of calculating or measuring ink consumption, it SHALL provide an AmountPool.
Ink		r		w	See ▸ [XJDF 2.2].
Part		r		w	See ▸ [XJDF 2.2].

5.7.2.3 AmountPool

Table 5.47: AmountPool Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
PartAmount		r		w	See ▸ [XJDF 2.2].

5.7.2.3.1 PartAmount

Table 5.48: PartAmount Element sent by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Amount		r		w	@*Amount* SHALL specify the actual amount of ***Ink*** consumed during good production. If the *Worker* is not capable of differentiating good and waste ink consumption, @*Amount* SHALL specify the total amount of ***Ink*** consumed. See also ▸ [Management Information System ICS].
Waste		r		w←	@*Waste* SHALL specify the actual amount of ***Ink*** consumed during waste production. If the *Worker* is not capable of differentiating good and waste ink consumption, @*Waste* SHALL NOT be specified. See also ▸ [Management Information System ICS].

Table 5.48: PartAmount Element sent by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Part		r		w?	***Part*** MAY be specified to enable tracking of individual *Press Runs*.

5.7.2.3.2 Part

Table 5.49: Ink Part Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
LotID		r		w?	See ▸ [XJDF 2.2].
Separation		r		w	See ▸ [XJDF 2.2].
SheetName		r		w?	See ▸ [XJDF 2.2].
Side		r		w?	See ▸ [XJDF 2.2].
WebName Web Exception		r?		w?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.
<all other attributes>				w!	

5.7.2.4 Ink

Table 5.50: Ink Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
InkType		r		w	See ▸ [XJDF 2.2].

5.7.2.5 Part

PartAmount/***Part*** SHALL NOT contain any attributes that are already defined in ***Ink***/***Resource***/***Part***. See ▸ [XJDF 2.2].

Table 5.51: Ink Part Element returned by a Worker (Sheet 1 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
LotID		r		w?	See ▸ [XJDF 2.2].
PartVersion		r	w!	w	See ▸ [XJDF 2.2].
Separation			w!	w!	@*Separation* SHALL NOT be specified in ***PartAmount***/***Part***. See ▸ [XJDF 2.2].
SheetName		r		w?	See ▸ [XJDF 2.2].
Side		r		w?	See ▸ [XJDF 2.2].

Table 5.51: Ink Part Element returned by a Worker (Sheet 2 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
WebName Web Exception		r?		w?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.
<all other attributes>				w!	

5.8 Media

5.8.1 Paper Media

5.8.1.1 Paper Media sent by a Manager

5.8.1.1.1 ResourceSet

Table 5.52: Media ResourceSet Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ID	w!	w!			Individual ***Resource*** (Media) SHALL be referenced by ***Component***/@*MediaRef*.
Name	w	w	r	r	See ▸ [XJDF 2.2].
Media	w	w	r	r	
Usage	w!	w!			***Media*** SHALL be referenced by ***Component***/@*MediaRef*.
Resource (Media)	w	w	r	r	See ▸ [XJDF 2.2].

5.8.1.1.2 Resource

Table 5.53: Media Resource Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ID	w	w	r	r	Individual ***Resource*** (Media) SHALL be referenced by ***Component***/@*MediaRef*.
AmountPool	w!	w!			See ▸ [XJDF 2.2].
Media	w	w	r	r	See ▸ [XJDF 2.2].
Part	w?	w?	r	r	See ▸ [XJDF 2.2].

5.8.1.1.3 Media

Table 5.54: Media Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Dimension Web Exception	w	w	r	r	@*Dimension* SHALL specify the width and height of a press sheet. **Web Exception:** The Y dimension, i.e., the length of the media roll MAY be set to zero if @*MediaUnit* = "Roll".
MediaType	w	w	r	r	See ▸ [XJDF 2.2].
MediaUnit	w	w	r	r	See ▸ [XJDF 2.2].
Roll	w←	w←	r	r	"Roll" SHALL be specified for *Web Fed* presses.
Sheet	w←	w←	r	r	"Sheet" SHALL be specified for *Sheet Fed* presses.
<all other values>	w!	w!			
Thickness	w←	w←	r	r	@*Thickness* SHALL be specified if any ***Component***/@*MediaRef* references this ***Media*** and has a non-zero value of the third value (i.e., thickness) of ***Component***/@*Dimensions*.
Weight		w		r	See ▸ [XJDF 2.2].

5.8.1.1.4 Part

Table 5.55: Media Part Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
SheetName	w?	w?	r	r	See ▸ [XJDF 2.2].
WebName Web Exception	w?	w?	r?	r?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.
<all other attributes>	w!	w!			

5.8.1.2 Paper Media sent by a Worker

5.8.1.2.1 ResourceSet

Table 5.56: Media ResourceSet Element (Sheet 1 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ID			w!	w!	Individual ***Resource*** (Media) SHALL be referenced by ***Component***/@*MediaRef*.
Name	r	r	w	w	See ▸ [XJDF 2.2].
Media	r	r	w	w	
Usage			w!	w!	***Media*** SHALL be referenced by ***Component***/@*MediaRef*.

Table 5.56: Media ResourceSet Element (Sheet 2 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Resource (Media)	r	r	w	w	See ▸ [XJDF 2.2].

5.8.1.2.2 Resource

Table 5.57: Media Resource Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
ID	r	r	w	w	Individual ***Resource*** (Media) SHALL be referenced by ***Component***/@*MediaRef*.
AmountPool			w!	w!	Amount related information shall be specified by the ***Components*** that reference this ***Media***.
Part	r	r	w?	w?	See ▸ [XJDF 2.2].

5.8.1.2.3 Part

Table 5.58: Media Part Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
LotID		r		w?	See ▸ [XJDF 2.2].
SheetName	r	r	w?	w?	See ▸ [XJDF 2.2].
WebName Web Exception	r?	r?	w?	w?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.
<all other attributes>			w!	w!	

5.8.2 Plate and Blanket Media

5.8.2.1 ResourceSet

Table 5.59: Media ResourceSet Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	w	w	r	r	See ▸ [XJDF 2.2].
Media	w	w	r	r	
Usage	w	w	r	r	See ▸ [XJDF 2.2].
Resource (Media)	w	w	r	r	See ▸ [XJDF 2.2].

5.8.2.2 Resource

Table 5.60: Media Resource Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool	w!	w!			See ▸ [XJDF 2.2].
Media	w	w	r	r	See ▸ [XJDF 2.2].
Part	w	w	r	r	See ▸ [XJDF 2.2].

5.8.2.3 Media

Table 5.61: Media Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Dimension	w	w	r	r	See ▸ [XJDF 2.2].
MediaType	w	w	r	r	See ▸ [XJDF 2.2].

5.8.2.4 Part

Table 5.62: Media Part Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
SheetName	w?	w?	r	r	See ▸ [XJDF 2.2].
Side	w?	w?	r	r	See ▸ [XJDF 2.2].
Separation	w!	w?		r	See ▸ [XJDF 2.2].
<all other attributes>	w!	w!			

5.9 NodeInfo

This ICS limits the *Partitioning* requirements for ***NodeInfo***. For additional *Conformance Requirements*, see ▸ [Management Information System ICS].

5.9.1 NodeInfo sent by a Manager

5.9.1.1 ResourceSet

Table 5.63: NodeInfo ResourceSet Element sent by a Manager (Sheet 1 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	w	w	r	r	See ▸ [Management Information System ICS].
NodeInfo	w	w	r	r	

Table 5.63: NodeInfo ResourceSet Element sent by a Manager (Sheet 2 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Usage	w	w	r	r	See ▸ [Management Information System ICS].
Input	w	w	r	r	
Resource	w	w	r	r	See ▸ [Management Information System ICS].

5.9.1.2 Resource

Table 5.64: NodeInfo Resource Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
DescriptiveName	w?	w?	r	r	@*DescriptiveName* defines descriptions for one or more *Press Runs*. The value of @*DescriptiveName* SHOULD be presented to the *Operator* for each *Press Run*. If not specified, the value of ***XJDF***/@*DescriptiveName* SHOULD be presented to the *Operator*. **Note:** If ***NodeInfo*** is *Partitioned* by "SheetName", "Side" and "PartVersion" a *MIS* can define different descriptions for the front and back sides of each version of each *Sheet*.
AmountPool	w!	w!			See ▸ [XJDF 2.2].
NodeInfo	w	w	r	r	See ▸ [Management Information System ICS].
Part	w?	w?	r	r	***Part*** SHOULD reflect the planned *Press Runs*.

5.9.1.3 NodeInfo

Table 5.65: NodeInfo Element sent by a Manager

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
End		w?		r	See ▸ [Management Information System ICS].
Start		w?		r	See ▸ [Management Information System ICS].

5.9.1.4 Part

Table 5.66: NodeInfo Part Element sent by a Manager (Sheet 1 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
PartVersion	w!	w?		r	@*PartVersion* MAY be specified for splitting versions over different *Press Runs*.
Separation	w!	w?		r	@*Separation* MAY be specified if colors are split over different *Press Runs*.

Table 5.66: NodeInfo Part Element sent by a Manager (Sheet 2 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
SheetName	w	w	r	r	@*SheetName* SHALL be specified if parts with different *Sheet* names will either be scheduled, described differently or if @*Side* is specified in this element.
Side	w←	w←	r	r	@*Side* SHALL be specified for scheduling of for describing sides independently. For example the *Manager* SHALL specify @*Side* = "Back" if a 'work and turn' job has been interrupted after the first *Press Run* and the *Manager* is submitting the job again for the second run.
<all other attributes>	w!	w!			

5.9.2 NodeInfo returned by a Worker

5.9.2.1 ResourceSet

Table 5.67: NodeInfo ResourceSet Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	r	r	w	w	See ▸ [Management Information System ICS].
NodeInfo	r	r	w	w	
Usage	r	r	w	w	See ▸ [Management Information System ICS].
Input	r	r	w	w	
Resource	r	r	w	w	See ▸ [Management Information System ICS].

5.9.2.2 Resource

Table 5.68: NodeInfo Resource Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool			w!	w!	See ▸ [XJDF 2.2].
NodeInfo	r	r	w	w	See ▸ [Management Information System ICS].
Part	r	r	w	w	See ▸ [XJDF 2.2].

5.9.2.3 NodeInfo

Table 5.69: NodeInfo Element returned by a Worker (Sheet 1 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
End	r	r	w	w	See ▸ [Management Information System ICS].

Table 5.69: NodeInfo Element returned by a Worker (Sheet 2 of 2)

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Start	r	r	w	w	See ▸ [Management Information System ICS].

5.9.2.4 Part

Table 5.70: NodeInfo Part Element returned by a Worker

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
PartVersion		r	w!	w?	@*PartVersion* MAY be specified for splitting versions over different *Press Runs*.
Separation		r	w!	w?	@*Separation* MAY be specified if colors are split over different *Press Runs*.
SheetName	r	r	w	w	See ▸ [Management Information System ICS].
Side	r	r	w←	w←	@*Side* SHALL be specified if each side was printed in a separate *Press Run*. For example the *Manager* SHALL specify @*Side* = "Back" if a 'work and turn' job has been interrupted after the first *Press Run* and the *Manager* is submitting the job again for the second run.
<all other attributes>			w!	w!	

5.10 Preview

5.10.1 ResourceSet

Table 5.71: Preview ResourceSet Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	w	w	r	r	See ▸ [XJDF 2.2].
Preview	w	w	r	r	
Usage	w	w	r	r	See ▸ [XJDF 2.2].
Input	w	w	r	r	
Resource (Preview)	w	w	r	r	See ▸ [XJDF 2.2].

5.10.2 Resource

Table 5.72: Preview Resource Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool	w!	w!			See ▸ [XJDF 2.2].
Part	w	w	r	r	See ▸ [XJDF 2.2].
Preview	w	w	r	r	See ▸ [XJDF 2.2].

5.10.3 Part

Table 5.73: Preview Part Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
PartVersion	w!	w←		r	@*PartVersion* SHALL be specified for splitting versions over different *Press Runs*.
PreviewType	w←	w←	r	r	See ▸ [XJDF 2.2].
Separation	w←	w←	r	r	@*PreviewType* = "Separation" SHALL be specified for separation previews that SHALL be used to define ***InkZoneProfile*** resources for use in **InkzoneCalculation**.
<all other values>	w?	w?	r?	r?	Use of other values are out of scope for this ICS.
Separation	w←	w←	r	r	@*Separation* SHALL be specified if ***Preview***/@*PreviewFileType* = "PNG" and SHALL NOT be specified otherwise.
SheetName	w	w	r	r	See ▸ [XJDF 2.2].
Side	w←	w←	r	r	@*Side* SHALL be specified if ***Preview***/@*PreviewFileType* = "PNG" and MAY be specified otherwise.
WebName Web Exception	w?	w?	r?	r?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.
<all other attributes>	w!	w!			

5.10.4 Preview

Table 5.74: Preview Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
PreviewFileType	w	w	r	r	See ▸ [XJDF 2.2].
CIP3Single	w←	w←	r	r	
PNG	w←	w←	r	r	
<all other values>	w!	w!			

Table 5.74: Preview Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
FileSpec	w	w	r	r	***FileSpec*** SHALL reference a file that has a format as specified by @*PreviewFileType*.

5.10.5 FileSpec

Table 5.75: FileSpec Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
URL	w	w	r	r	See ▸ [XJDF 2.2].

5.11 VarnishingParams

VarnishingParams SHALL be provided to specify varnishing in dedicated varnishing modules. Varnishing in a print module is actually a standard print separation.

5.11.1 ResourceSet

Table 5.76: VarnishingParams ResourceSet Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Name	w	w	r	r	See ▸ [XJDF 2.2].
VarnishingParams	w	w	r	r	
Usage	w	w	r	r	See ▸ [XJDF 2.2].
Input	w	w	r	r	
Resource (VarnishingParams)	w	w	r	r	See ▸ [XJDF 2.2].

5.11.2 Resource

Table 5.77: VarnishingParams Resource Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
AmountPool	w!	w!			See ▸ [XJDF 2.2].
Part	w	w	r	r	See ▸ [XJDF 2.2].
VarnishingParams	w	w	r	r	See ▸ [XJDF 2.2].

5.11.3 Part

Table 5.78: VarnishingParams Part Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Separation	w	w	r	r	See ▸ [XJDF 2.2].
SheetName	w?	w?	r	r	See ▸ [XJDF 2.2].
Side	w?	w?	r	r	@*Side* SHALL be specified for jobs with one set of plates used for both surfaces, i.e., "WorkandTurn", "WorkAndTumble" and "Simplex". In these cases @*Side* = "Front" SHALL be specified.
WebName Web Exception	w?	w?	r?	r?	See ▸ [XJDF 2.2]. **Web Exception:** @*WebName* MAY be specified for multi-web presses and SHALL NOT be specified otherwise.
<all other attributes>	w!	w!			

5.11.4 VarnishingParams

Table 5.79: VarnishingParams Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
VarnishArea	w	w	r	r	See ▸ [XJDF 2.2].
Full	w←	w←	r	r	
Spot	w←	w←	r	r	@*VarnishArea* = "Spot" SHALL NOT be specified if @*VarnishingMethod* = "Plate". **Note:** A spot varnish in a print module is actually a standard separation that uses transparent or translucent ink.
VarnishMethod	w	w	r	r	See ▸ [XJDF 2.2].
Blanket	w←	w←	r	r	
Independent	w!	w!			
Plate	w←	w←	r	r	

6 Subelements

6.1 DeviceInfo

DeviceInfo represents the state of a *Device*.

Table 6.1: DeviceInfo Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
CounterUnit	r	r	w	w	See ▸ [Management Information System ICS].
count	r	r	w←	w←	"count" SHALL be specified for *Sheet Fed* offset devices and MAY be specified for *Web Fed* devices.
m Web Exception	r	r	w←	w←	**Web Exception:** "m" SHALL NOT be specified for *Sheet Fed* offset devices and MAY be specified for *Web Fed* devices.
<all other values>			w!	w!	
EndTime	r	r	w←	w←	See ▸ [Management Information System ICS].
Speed	r	r	w	w	See ▸ [Management Information System ICS].
Status	r	r	w	w	See ▸ [Management Information System ICS].
StatusDetails	r	r	w	w	See ▸ [Management Information System ICS].
TotalProductionCounter	r	r	w	w	See ▸ [Management Information System ICS].
JobPhase	r	r	w←	w←	See ▸ [Management Information System ICS].

6.1.1 JobPhase

JobPhase represents the state of a *Press Run*.

Table 6.2: JobPhase Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Amount	r	r	w	w	See ▸ [Management Information System ICS]. If no good production was created, a value of "0" SHALL be specified.
EndTIme	r	r	w←	w←	See ▸ [Management Information System ICS].
JobID	r	r	w	w	See ▸ [Management Information System ICS].
JobPartID	r	r	w←	w←	See ▸ [Management Information System ICS].
StartTime	r	r	w	w	See ▸ [Management Information System ICS].
Status	r	r	w	w	See ▸ [Management Information System ICS].
StatusDetails	r	r	w←	w←	See ▸ [Management Information System ICS].

Table 6.2: JobPhase Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
Waste	r	r	w	w	See ▸ [Management Information System ICS]. If no waste production was created, a value of "0" SHALL be specified.
Part	r	r	w	w	***Part*** SHALL be specified and SHALL represent the job phase. See ▸ Table 5.70 NodeInfo Part Element returned by a Worker.

6.2 Notification

Notification has no additional *Conformance Requirements*. See ▸ [Management Information System ICS].

6.3 ResourceInfo

ResourceInfo specifies information about the usage of one type of resource.

Table 6.3: ResourceInfo Element

NAME OR VALUE	MANAGER LEVEL 1	MANAGER LEVEL 2	WORKER LEVEL 1	WORKER LEVEL 2	DESCRIPTION
JobID	r	r	w	w	See ▸ [Management Information System ICS].
JobPartID	r	r	w←	w←	See ▸ [Management Information System ICS].
Scope	r	r	w	w	See ▸ [Management Information System ICS].
ResourceSet	r	r	w	w	See table ▸ ResourceInfo Specific Resource Conformance Requirements for a list of supported ***ResourceSet*** types.

6.3.1 ResourceSet

ResourceInfo specifies information about the usage of one type of resource. The following table specifies the *Conformance Requirements* for resource types for *Managers* and *Workers*. *Managers* and *Workers* MAY support other resource types.

6.3.1.1 Specific Resource Conformance Requirements for ResourceInfo

Table 6.4: ResourceInfo Specific Resource Conformance Requirements

RESOURCE NAME	MANAGER 1	MANAGER 2	WORKER 1	WORKER 2	DESCRIPTION
ResourceSet [@*Name* = "Component" and @*Usage* = "Output"]	r	r	w	w	The output ***Component*** resource returned by a *Worker* SHALL be supported.
ResourceSet [@*Name* = "Ink" and @*Usage* = "Input")		r		w?	The input ***Ink*** resource returned by a *Worker* MAY be supported.

6.4 Subscription

See ▸ [Management Information System ICS]. This ICS has no additional *Conformance Requirements*.

Appendix A

A References

Table A.1: Normative References

SYMBOLIC NAME	REFERENCED DOCUMENT
[Management Information System ICS]	*Management Information Systems ICS* Version 2.2 Date: 15 October 2024 Produced by: CIP4 Organization Available at: http://www.CIP4.org
[XJDF 2.2]	*Exchange Job Definition Format Specification* Version 2.2 Date: 23 May 2024 Produced by: CIP4 Organization Available at: http://www.CIP4.org
[XPath]	*XML Path Language (XPath) 2.0 (Second Edition)* *Version W3C Recommendation 14 December 2010* Date: 14 December 2010 Produced by: World Wide Web Consortium (W3C) Available at: https://www.w3.org/TR/xpath20/

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