Commercial Web: MIS to WebPress ICS

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Web/Rotary WG

Abstract

This CIP4 JDF Interoperability Conformance Specification (ICS) defines the interoperability requirements for JDF Commercial WebPrinting (Web/Rotary Offset Printing). This ICS defines the Conformance Requirements for an implementation of a JDF Device that consumes Job Tickets for commercial WebPrinting, and returns the Job Tickets. This ICS defines two conformance Levels. The first level, describes the conventional plate handling and the second describes direct imagining on a press.

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1 Introduction

This ICS describes the Interface between any PPS (Production Planning System) and a Press Management System.

2 Glossary

This section defines terminology used throughout this document. References to other documents are indicated with square brackets, e.g. [JDF1.3]. For most terms, see the Terminology section in [Base-ICS].

This section contains terms that pertain to this ICS:

Table 1: Glossary

Term	Definition
Copy	Individual Final Product; it specifies a single exemplar of a printed product. So, a ***Copy*** represents one single product that the reader holds in his hands.
GearSide	The side of the press where the drives/gears are mounted. See ***OperatingSide***; it is the other side of the press.
Manager	In this ICS, refers to the ***Production Management System***.
MIS	In this ICS, refers to a system that manages and/or controls business related topics of a print Job. You may look at this system as the upper most top-level Controller in a JDF workflow. Usually it communicates with a ***Production Management System***.
OperatingSide	The side of the press where the operator works. See ***GearSide***; it is the other side of the press.
Prepress Workflow System	One partner system that communicates with ***Press Controllers*** using JDF and JMF and can provide all Prepress information. A ***Prepress Workflow System*** may provide only the Resource updates [PRECP-ICS] if it works together with a ***Manager***.
Press Controller	A Device or Controller that controls press Devices and handles all the communication via JDF and JMF. It typically communicates with a ***Production Management System*** and a ***MIS*** (partner system that communicates with ***Press Controllers*** using JDF and JMF.
Production Management System	Refers to a system that controls the production processes by communicating to sub-level Controllers and/or Devices. The ***Production Management System*** may be an integrated part of an ***MIS*** implementation.
Production Run	Specifies one run of a ***Web Press***. Such a run produces one or more components in parallel.
Roll	A kind of media that is mainly used in connection with ***Web Printing***. In British English the name “reel” for “roll” is in widespread use. In [JDF1.3] “Roll” is used as synonym of “reel”.
Sheet	The piece of paper or other material that is printed by a ***Web Press*** and is cut after printing from a ***Web*** into one ore more pieces.
Web	The paper that is unwound from the ***Roll*** and fed into the ***Web Press*** without

Term	Definition
	cutting it.
Web Press	The physical Device that performs ***Web Printing***.
Web Printing	A printing Process that is fed by paper ***Rolls***. Within the press, the paper may be cut parallel to its moving direction and/or folded. While exiting the press, the paper is always cut perpendicular to its moving direction.
WebProduct	The printed Product that comes out of a ***Web Press***. A single ***WebProduct*** consists of one ***Sheet*** or an inline folded ***Sheet*** that is typically piled on top of other identical ***WebProducts***, depending on the equipment. In contrast to a Product from a sheet-fed press, a ***WebProduct*** is usually already folded and cut.
WebSetup	In this ICS, refers to a Device configuration of the printing ***Web Press*** Device or parts of it. The press consists of a set of modules, where some subsets may be run in parallel, e.g. print modules. With one ***WebSetup***, multiple ***Webs*** may be printed in parallel forming one single or multiple output components.

2.1 Certification

Certification against the ICS for the Worker role can be performed with three types of data:

- The physical output.
- The JMF Messages or returned JDF file.
- User Interface, log files or screen representations.

3 Conformance Levels

This ICS defines one Conformance Level of Conformance Requirements for defining a ***Web Printing*** Job for WebPrinting.

This ICS defines two Conformance Levels, namely Levels 1 and 2. Level 1 is for a ***Web Press*** Device that reads JDF instances and writes back the results into the JDF instance, with conventional plates. Level 2 augments level 1 by supporting direct imaging inside a press.

See Appendix A "*How to Read ICS Documents*" in [Base-ICS] for an explanation of Conformance Tables.

To be conformant to a level of this ICS specified in the first column of Table 2, a ***Production Management System*** or ***Prepress Workflow System*** MUST conform to the Manager part and a ***Press Controller*** MUST conform to the Worker part of the ICSs and levels specified in all but the first and last columns of Table 2 below.

Table 2: Conformance Levels

Level of this ICS	[Base-ICS]	[JMF-ICS]	[MIS-ICS]	Description
1	2	2	1 or higher	For conventional plates.
2	2	2	1 or higher	For direct imaging of plates inside a press.

4 Conformance Tables – JDF Instances

4.1 JDF Node

In order to gain flexibility in the press room, the ***Press Controller*** always receives a Gray Box, even if the Gray Box has to be expanded to one Process only.

Table 3: JDF Node

Root Node of: JDF Instance

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Category	w			r?			
MisWeb.WebPrinting	w			r			
all remaining values	!w			r?			
ICSVersions	w←			r?			MUST be written in Root Node only.
MISWeb_L1-1.3	w←			r?			
MISWeb_L2-1.3		w←		r?			
RelatedJobID	w←			r?			See [MIS-ICS].
RelatedJobPartID	w←			r?			See [MIS-ICS].
Type	w			r			**r-Test:** see @Types.
ProcessGroup	w			r			In order to define a Gray Box.
Types	w			r			**r-Test:** The respective values for *Category*, *ICSVersions*, *Type* and *Types* in this ICS MUST result in a expansion of the ***Gray Box***. The expansion MUST contain all *Types* values supplied in the ***Gray Box***. The Worker MUST reject JDF Instances with *Types* values that the Worker does not Support.
ImageSetting		w←			r		For direct imaging inside a press.
ConventionalPrinting	w			r			
WebInlineFinishing	w			r			
InkZoneCalculation	w←			r			If Preview Images are present.
Stitching	w←			r			If stitching is planned for a ***WebProduct***.
Gluing	w←			r			If gluing is planned for a ***WebProduct***.
Version	w			r?			
1.3	w			r			

5 Conformance Tables – Gray Boxes

5.1 GB WebPrinting

The *Types* values in Table 3: JDF Node specify the Processes for this ***Gray Box***. For details of ***Gray Boxes***, see [MIS-ICS].

Table 4: GB WebPrinting – Input Resources

Name	Manager			Worker			Description
Level →	1	2	3	1	2	3	
ColorantControl	w			r			See Table 8: ColorantControl.
ConventionalPrintingParams	w			r			See Table 11: ConventionalPrintingParams.
CustomerInfo	w			r			See [Base-ICS].
Device	w?			r			See Table 12: Device.
ExposedMedia	w	w←		r	r		See Table 13: ExposedMedia – Plate.
GluingParams	w?			r			See Table 15: GluingParams.
Ink	w←			r?			See Table 17: Ink.
Media	w			r			See Table 18: Media – Paper and see Table 19: MediaLink – Paper.
NodeInfo	w			r			See Table 21: NodeInfo.
Preview	w?			r			See Table 22: Preview - Separation.
ProductionPath	w?			r			See Table 23: ProductionPath.
RunList		w←			r		See Table 24: RunList.
StitchingParams	w?			r			See Table 25: StitchingParams.
StrippingParams	w			r			See [MISPRE-ICS].
WebInlineFinishingParams	w?			r			See Table 26: WebInlineFinishingParams.

Table 5: GB WebPrinting – Output Resources

Name	Manager			Worker			Description
Level →	1	2	3	1	2	3	
Component	w			r			See Table 10: Component.

6 Conformance Tables – Resources

6.1 ByteMap

Table 6: ByteMap
Referenced by: RunList

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
FileSpec		w			r		See Table 14: FileSpec.

6.2 Color

Table 7: Color
Referenced by: ColorPool

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
CMYK	w←			r			MUST be supplied if the color is a standard CMYK Process colorant regardless of the value of @Name. For example, a black text plate can be defined with *Separation*="Text" and *CMYK*="*0 0 0 1*".
ActualColorName	w?			r			If the Manager determines the *ActualColorName* from the PDL file, it MUST supply the PDL color name (e.g. not "Spot1").
Name	w			r			A real color name is preferable. However, *Name* MAY be a generic placeholder like "Spot", "Spot1", "Spot02", "Metalic01".

6.3 ColorantControl

The **ColorantControl** Resource defines the colors used on a ***Web***-Press and provides additional data about colors.

The Worker determines the colors used and their order by evaluating the following two Elements of **ColorantControl** in the order listed:

- DeviceColorantOrder
- ColorantOrder

The Worker MUST NOT determine the ordering of colors used on a ***Web***-Press from the following Elements and Attributes of **ColorantControl**:

- ColorantParams
- *ProcessColorModel*

Table 8: ColorantControl

Input to: *GB WebPrinting*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
ProcessColorModel	w			r?			
PartIDKeys	w?			r			See Section 7 "Conformance Rules – Partitioning Summary".
WebSetup	w			r			
WebName	w←			r			MUST be specified if partitioned by *Side*.
Side	w?			r			
all remaining values	!w			r?			
ColorantParams	w←			r?			Must be specified if spot colors are present. See [JDF1.3].
ColorantOrder	w			r			Colorant order on a Sheet. It contains the colors that ColorantParams and *ProcessColorModel* define. If the Manager doesn't know the names of spot colors, then it MAY use "Spot1", "Spot2", or any other generic name. The Manager SHOULD NOT designate standard Process colors like Cyan, Magenta; Yellow, and Black with a generic name. See [MISPRE-ICS].
ColorPool	w			r			See Table 9: ColorPool.
DeviceColorantOrder	w?			r			Colorant order on the press. If supplied, it is strongly recommended to be the color order for printing. See [JDF1.3].

6.4 ColorPool

Table 9: ColorPool

Referenced by: ColorantControl

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Color	w			r			See Table 7: Color.

6.5 Component

Table 10: Component
Output from: *GB WebPrinting*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
ComponentType	w			r			A pair of exactly two values MUST be supplied. One of these values MUST either be `PartialProduct` or `FinalProduct`.
`Block`	w←			r			One of `Sheet` or `Block` MUST be specified.
`FinalProduct`	w←			r			If a final is produced on a ***Web Press***.
`PartialProduct`	w←			r			If a Partial Product is produced (value for the most cases).
`Sheet`	w←			r			One of `Sheet` or `Block` MUST be specified.
DescriptiveName	w			r			MUST be specified in each leaf Partition.
Dimensions	w			r?			
PartIDKeys	w?			r			
`WebSetup`	w			r			
`WebProduct`	w←			r			Must be defined, if more then one ***WebProduct*** will be produced with one ***WebSetup***.
`PartVersion`	w?			r?			If required, `PartVersion` SHOULD be used for different language versions.
all remaining values	!w			r?			

6.6 ConventionalPrintingParams

Table 11: ConventionalPrintingParams
Input to: *GB WebPrinting*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
PartIDKeys	w?			r			
`WebSetup`	w			r			
all remaining values	!w			r?			
PrintingType	w			r			
`WebSingle`	w			r			

6.7 Device

Table 12: Device
Input to: *GB WebPrinting*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
DeviceID	w			r			
PartIDKeys	w?			r			
WebSetup	w			r			
all remaining values	!w			r?			

6.8 ExposedMedia

6.8.1 ExposedMedia – Plate

Table 13: ExposedMedia – Plate
Input to: *GB WebPrinting*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
PartIDKeys	w			r			
WebSetup	w			r			
WebName	w			r			
Side	w			r			
Separation	w			r			
PartVersion	w?			r?			If used, *PartVersion* SHOULD be for different language versions.
all remaining values	!w			r?			
Media	w			r			See Table 20: Media – Plate.

6.9 FileSpec

Table 14: FileSpec
Referenced by: ByteMap

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
URL		w			r		Location of the needed Files for direct imaging.

6.10 GluingParams

Table 15: GluingParams
Input to: *GB WebPrinting*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
PartIDKeys	w?			r			
WebSetup	w			r			
WebProduct	w?			r			
Glue	w			r			See Table 16: Glue.

6.10.1 Glue

Table 16: Glue
Referenced by: GluingParams

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
WorkingDirection	w			r			

6.11 Ink

Table 17: Ink

Input to: *GB WebPrinting*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
ColorName	!w			r?			The *Separation* Partition Key MUST be used instead of *ColorName*.
InkName	w←			r?			The fully qualified name of the ink, for example: "Pantone 47" or "Varnish glossy". The Manager MUST provide an identical *InkName* if the same ink is used for multiple separations. The Manager MUST NOT set the value of this Attribute to non-specified values like "Spot 01" or any other non-describing text.
PartIDKeys	w			r			If the physical ink of a definite *Separation* does not vary over Partitions, it is strongly RECOMMENDED to Partition by *Separation* only. Otherwise the Partition structure MUST be identical to the Partitioning of **ColorantControl** with an additional *Separation* key at the leaves.
WebSetup	w←			r			
WebName	w←			r			
Side	w←			r			
Separation	w			r			
all remaining values	!w			r?			

6.12 Media

6.12.1 Media – Paper

Table 18: Media – Paper
Input to: *GB WebPrinting*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
DescriptiveName	w			r			Human readable name to help the operator select the correct media. See [Base-ICS].
Dimension	w			r			If paper length is set to zero, the paper length is undefined / unknown.
MediaType	w			r			
Paper	w			r			
MediaUnit	w			r			
Roll	w			r			
all remaining values	!w			r?			
PartIDKeys	w?			r			
WebSetup	w			r			If the Media will be used for more than one ***Production Run***. MUST be specified if partitioned by *WebName*.
WebName	w?			r			
Thickness	w			r			
Weight	w			r			

6.12.2 MediaLink – Paper

Table 19: MediaLink – Paper
Input to: *GB WebPrinting*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Transformation	w?			r			Shift of the paper relative to the press coordinate system.

6.12.3 Media – Plate

Table 20: Media – Plate

Referenced by: ExposedMedia – Plate

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
MediaType	w			r			
`Plate`	w			r			
PartIDKeys	w?			r			
`WebSetup`	w			r			
`WebName`	w←			r			MUST be specified if partitioned by `Side`.
`Side`	w←			r			MUST be specified if partitioned by `Separation`.
`Separation`	w?			r			
all remaining values	!w			r?			

6.13 NodeInfo

Table 21: NodeInfo

Input to: *GB WebPrinting*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
DescriptiveName	w?			r			Human readable name of the ***Production Run***.
End	w←			r			Estimated time when the Node execution will end. An optional clean-up phase belongs to this ***Production Run***. MUST be provided for scheduling.
PartIDKeys	w?			r			
`WebSetup`	w			r			
`PartVersion`	w?			r?			If used, `PartVersion` SHOULD be for different language versions.
Start	w←			r			Estimated time when the Node execution will start. An optional setup phase belongs to this ***Production Run***. MUST be provided for scheduling.

6.14 Preview

6.14.1 Preview – Separation

Table 22: Preview - Separation

Input to: *GB WebPrinting*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
PartIDKeys	w			r			See conformance rules Partitioning.
WebSetup	w			r			
WebName	w			r			
Side	w			r			
Separation	w			r			
PartVersion	w?			r?			If used, *PartVersion* SHOULD be for different language versions.
all remaining values	!w			r?			
PreviewUsage	w			r			
Separation	w			r			
Status	w			r			
Available	w←			r			If Previews are available.
Incomplete	w←			r			If Previews are not available yet.
URL	w←			r			MUST be supplied if *Status* = "*Available*".
file:…	w?			r			URL whose scheme is "*file*" MUST be an absolute URL.
http:…	w?			r			URL whose scheme is "*http*" MUST be an absolute URL.
cid:…	w?			r?			URL whose scheme is "*cid*". Is optional.
ftp:…	w?			r?			URL whose scheme is "*ftp*". Is optional.
all remaining values	!w			r?			

6.15 ProductionPath

Table 23: ProductionPath
Input to: *GB WebPrinting*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
PartIDKeys	w?			r			
WebSetup	w			r			
ProductionPathID	w			r			

6.16 RunList

Table 24: RunList
Input to: *GB WebPrinting*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
PartIDKeys		w			r		See Section 7 Conformance Rules – Partitioning Summary.
WebSetup		w			r		
WebName		w			r		
Side		w			r		
Separation		w			r		
PartVersion		w?			r?		If used, *PartVersion* SHOULD be e.g. for different language versions.
all remaining values		!w			r?		
ByteMap		w			r		See Table 6: ByteMap.

6.17 StitchingParams

Table 25: StitchingParams
Input to: *GB WebPrinting*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
PartIDKeys	w?			r			

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
WebSetup	w			r			
WebProduct	w?			r			

6.18 WebInlineFinishingParams

Table 26: WebInlineFinishingParams

Input to: *GB WebPrinting*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
PartIDKeys	w?			r			
WebSetup	w			r			
WebProduct	w?			r			
FolderProduction	w			r			See Table 27: FolderProduction.

6.18.1 FolderProduction

Table 27: FolderProduction

Referenced by: WebInlineFinishingParams

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
FolderModuleIndex	w?			r			If Device/Module/@ModuleIndex is specified, it MUST have the same value as *FolderModuleIndex*.
ProductionType	w			r			
Collect	w←			r			If the ***WebProduct*** is collected.
NonCollect	w←			r			If the ***WebProduct*** is not collected.

7 Conformance Rules – Partitioning Summary

The following table provides a summary of the Manager Conformance values for *PartIDKeys* values for all the tables in this ICS. **Note:** all information in this table comes from other tables in this ICS. The order of the *PartIDKeys* is defined by the Resource tables.

Table 28: PartIDKeys Overview – Commercial Printing

PartIDKeys values	ColorantControl	Component	ConventionalPrintingParams	Device	ExposedMedia – Plate	GluingParams	Ink	Media – Paper	Media – Plate	NodeInfo	Preview – Separation	ProductionPath	RunList	StitchingParams	WebInlineFinishingParams
PartIDKeys	w?	w?	w?	w?	w	w?	w	w?	w?	w?	w	w?	w	w?	w?
WebSetup	w	w	w	w	w	w	w←	w	w	w	w	w	w	w	w
WebProduct		w←				w?								w?	w?
WebName	w←				w		w←	w?	w←		w		w		
Side	w?				w		w←		w←		w		w		
Separation					w		w		w?		w		w		
PartVersion		w?			w?					w?	w?		w?		

8 References

8.1 Normative References

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