Mapping of IPP Attributes to JDF/1.1 Product Intent and Process Resources

==Green highlighted text like this means the JDF addition is a color and imaging addition - all have been edited into a copy of JDF/1.1a for review.==

From: Claudia Alimpich, IBM, Tom Hastings, Xerox, Don Fullman

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Abstract

This document lists the subset of JDF/1.1 (plus additions for JDF/1.2) for the Digital Printing Interoperability Conformance Specification (ICS). The ICS will contain both an Intent Interface subset and a Digital Printing combined process subset. To obtain a reasonable JDF/1.1 subset, this document maps IPP 1.1 Job Creation attributes and additions to JDF 1.1 Product Intent, JDF/1.1 Digital Printing combined process, JDF/1.0 IDPrinting process, Job Ticket API (JTAPI), the Common Unix Printing System (CUPS), and the PODi PPML Job Ticket. A percentage of IPP covered by each of these other printing semantics is included. Finally, each IPP attribute is also described briefly with references to the detailed descriptions. ==ISSUES needing action and proposed JDF additions/changes are highlighted like this.== Proposed additions are also listed in Table 3 and Table 4.

Status of this document:

This is an intermediate/rough working document, not a final edition.

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1   Mapping of IPP attributes

Table 2 lists all of the IPP Job attributes that a client can supply or a Printer can return in Job Creation operations. Table 1 is the legend that explains the columns in Table 2:

Table 1 - Legend for the columns in Table 2

Column heading	Totals	% IPP[1]	Description
IPP Attribute Name	$251^2 = 209 + 42$ (S)	100	The name of the IPP attribute or collection member attribute. • (S) - Status Set by System. The IPP attribute that represents Status that is Set by the System, such as the "job-state" and "number-of-intervening-jobs" attributes, and cannot be supplied by the client in a Job Creation request. • (M) - Multiple-document-handling affects semantics. The attribute whose effect depends on the "multiple-document-handling" attribute to specify whether the Input Document in multi-document jobs are combined into a single Output Document or are kept as separate Output Documents. • (Mn) - Multiple-document-handling affects page numbering only. The attribute in which "multiple-document-handling" only affects whether the page

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[1] The % of IPP is the percent of the (last counted in version 0.94, November 29, 2002) IPP attributes, including collection member attributes, that can be supplied in a Job Creation operation request.

[2] The total of IPP attributes (last counted in version 0.94, November 29, 2002) includes counting the member attributes of the collection attributes.

Column heading	Totals	% IPP[1]	Description
			numbers in the attribute are a single sequence 1:n for the concatenated documents or are separate sequences of 1:n, one for each document. If an IPP attribute does not exist for a certain feature/function then a brief description of the feature/function will. MS-WORD Styles used: Member attribute names (members of collection attributes) (style: Normal Mem) and attribute values are indented (style: Normal Val). Double indenting for nested member attributes (style: Normal Mem1) and member attribute values (style: Normal Val1).
P (Priority)	H (High) = 94 M (Medium) = 19 L (Low) = 62 N (Never) = 45	37% 8% 25% 18%	The priority in which to include the feature/function in the definition of a job ticket for digital printing: • H (High) - It is imperative that the feature/function be included in the initial version of the job ticket for digital printing if the job ticket is to be useful. • M (Medium) - The feature/function should be one of the first to be considered for the next version of the job • ticket for digital printing. We will still review proposed JDF additions for JDF/1.2 for these. • L (Low) - The feature/function can be included in a later version of the job ticket for digital printing. We won't review JDF additions for JDF/1.2. • N (Never) - The feature/function will not be included in any version of the job ticket for digital printing. We won't review JDF additions for JDF/1.2.
PODi	1.1 = 20 EFI = 63	8% 25	Where the feature/function is included: • 1.1 - The feature/function is currently included in the PODi PPML Job Ticket Specification Version 1.1. • EFI - The feature/function is included in the "EFI Job Ticket Proposal" document.
Cat (Category)	1 = 8 2 = 5 3 = 11 4 = 4 5 = 29 6 = 26 7 = 27 8 = 29 9 = 2 10 = 22 11 = 2 C	3% 2% 4% 2% 12% 10% 11% 12% 1% 9% 1%	The category that the feature/function belongs to. The possible categories are: • 1 - Customer and billing info • 2 - Delivery of finished product - due date and shipping instructions, proofing approvals • 3 - Files being submitted to the shop - whatever info is necessary for an automated system to do the job • 4 - What to print - how many, subset of files • 5 - Media to use • 6 - RIPping parameters - generating images • 7 - Assembling printable images from source-file pages onto a sheet • 8 - Assembling sets of sheets and finishing instructions • 9 - Equipment to use • 10 - General comments, instructions, messages, and information • 11 - Proofing • C - indicates a color or imaging attribute and is orthogonal to the numeric categories.
JDF 1.1 Product Intent	90 (including 27 new proposed)	36%	The JDF 1.1 Product Intent Resource and JDF attribute using a subset of the XPath [xpath] notation. The following subset of the XPath expression notation is used to specify a JDF element or attribute: The JDF element or attribute usually occurs inside a JDF resource. Start the XPath expression at the resource level and show all the child relationships down to the element or attribute we are mapping to, qualified with predicates as needed. A parent-child relationship is represented with '/'. An element name is just the unadorned element name. An attribute name is prefixed with '@'. Example: RunList/LayoutElement/FileSpec/@URL is the URL attribute of the FileSpec resource element in the LayoutElement resource element in the RunList resource. A predicate is enclosed in '[]'. So the meaning of: IDPrintingParams/JobSheet/Comment[@Name="job-recipient-name"] is the text field of the Comment element in the JobSheet resource element in the IDPrintingParams resource element when the value of the Name attribute in the Comment element is "job-recipient-name". For example, ComponentLink[@ProcessUsage="Good"]/@Amount is the Amount attribute of the ComponentLink element whose ProcessUsage attribute is set to "Good". (ComponentLink is a ResourceLink, not a Resource, so it's one of the unusual cases where we are not mapping into a resource.) • Unknown - Indicates that it has not yet been determined if a JDF Intent resource/attribute currently exists for the feature/function. This will be the case for most of the features/functions with a Priority of Medium or Low. • (Dep. in JDF/1.2) - indicates something deprecated in JDF/1.2, but that should be used in JDF/1.1. • N/A - Not Applicable - It is not necessary that this feature/function be represented by a JDF Intent resource/attribute. This will also be the case for the features/functions with a Priority of Never. • (P) - Process. The feature/function is part of the Intent Interface (what a Customer puts into a JDF ticket to give to a Print Shop) to be specified by the ICS but is not currently defined using JDF/1.1a Product Intent resource. Instead, this feature will be represented in the JDF Intent subset using the corresponding Process resource insert in the Product Intent node, thereby avoiding adding duplicative syntax to JDF and facilitating the mapping from the

Column heading	Totals	% IPP[1]	Description
			Intent subset to the DigitalPrinting combined process representation. See JDF/1.1 section 4.1.4 "Specification of Process Specifics for Product Intent Nodes" for details and an example. • (S) - Same. The feature/function has the same semantics in both the JDF 1.1 Product Intent and JDF 1.1 Process Resource. • (N) - Needed New. The JDF for the feature/function is not currently defined in the JDF 1.1 spec and needs to be proposed to be added to JDF/1.2 by a WG. • (W) - CIP4 Digital Printing Working Group approved for JDF/1.2; needs CIP4 Technical Steering Committee (TSC) approval for JDF/1.2. • (T) - Approved by the CIP4 Technical Steering Committee (TSC) as an addition to JDF/1.2. JDF Resources and attributes highlighted like this indicate the *modified* part of the proposed or approved JDF addition for JDF/1.2. Existing parts of an addition are *not* highlighted. Promoting an element to the top level in the JDF spec is *not* highlighted in this table, though any change is so highlighted in the edited JDF/1.1a spec. See Table 3 and Table 4 for the status of the addition. The edited version of the JDF/1.1a spec with the proposed addition can be found: ftp://ftp.pwg.org/pwg/fsg/jobticket/IPP_Mapping/ippjdf-mapping-latest.pdf ftp://ftp.pwg.org/pwg/fsg/jobticket/IPP_Mapping/ippjdf-mapping-latest.doc JDF attribute values in this table are *not* italicized as in [JDF] and are *not* indented,. Specific values, such as enumerations, NMTOKEN, and staring values, are double quoted as in JDF, since they are XML attribute values. Non-specific values are indicated in *italics* without double quotes and indicate the semantics of the value, such as *customer name*.
JDF 1.1 Process Resource	174 (including 22 new proposed)	69%	The JDF 1.1 Process on the first line (or several Processes separated by commas, if more than one Processes uses the Resource), followed by the Resource, and JDF attribute(s) using XPath notation (see explanation of XPath subset in the explanation above. If the IPP attribute maps to several JDF processes that MUST be used in combination, the process names are separated by white space in the order required and are collected inside a single set of parentheses. • Unknown - Indicates that it has not yet been determined if a JDF Process resource/attribute currently exists for the feature/function. This will be the case for most of the features/functions with a Priority of Medium or Low. • (Dep. in JDF/1.2) - indicates something deprecated in JDF/1.2, but that should be used in JDF/1.1. • N/A - Not Applicable - It is not necessary that this feature/function be represented by a JDF Process resource/attribute. This will also be the case for the features/functions with a Priority of Never. • (S) - Same. The feature/function has the same semantics in both the JDF 1.1 Product Intent and JDF 1.1 Process Resource. • (N) - Needed New. The JDF for the feature/function is not currently defined in the JDF 1.1 spec and needs to be proposed to be added to JDF/1.2 by a WG. • (W) - CIP4 Digital Printing Working Group approved for JDF/1.2; needs CIP4 Technical Steering Committee (TSC) approval for JDF/1.2. • (T) - Approved by the CIP4 Technical Steering Committee (TSC) as an addition to JDF/1.2. JDF Resources and attributes highlighted like this indicated the *modified* part of the proposed or approved JDF addition for JDF/1.2. Existing parts of an addition are *not* highlighted. Promoting an element to the top level in the JDF spec is *not* highlighted in this table, though any change is so highlighted in the edited JDF/1.1a spec. See Table 3 and Table 4 for the status of the addition. The edited version of the JDF/1.1a spec with the proposed addition can be found: ftp://ftp.pwg.org/pwg/fsg/jobticket/IPP_Mapping/ippjdf-mapping-latest.pdf ftp://ftp.pwg.org/pwg/fsg/jobticket/IPP_Mapping/ippjdf-mapping-latest.doc JDF attribute values are *not* italicized (unlike [JDF]) and are *not* indented. Specific values, such as enumerations, NMTOKEN, and staring values, are double quoted as in JDF, since they are XML attribute values. Non-specific values are indicated in *italics* without double quotes and indicate the semantics of the value, such as *customer name*.
ICS for DP	69	27%	Whether or not the feature is in the "Interoperability and Conformance Specification (ICS) for Digital Printing" from Claudia Alimpich, version 0.06 ([ICS] and if it is what the feature/function is called in the ICS for DP. • No - The feature/function is not currently in the ICS for DP. • (X) - The feature/function is either currently included in the ICS for DP or needs to be added.
JTAPI	1.0 = 90 x.x = 121	36% 48%	The version of JTAPI that the feature/function will be included in and the name of the JTAPI attribute. • @ - The feature/function will be included in the alpha version of the JTAPI. • 1.0 - The feature/function will be included in version 1.0 of the JTAPI. • x.x - The feature/function is to be included in a future (currently undefined) release of the JTAPI.

Column heading	Totals	% IPP[1]	Description
			• Never - The feature/function will never be included in the JTAPI. MS-WORD Styles used: Normal JT attr - hanging indent 0.2 inches.
CUPS	113 = 90 + 23 (S)	45%	The version of the Common Unix Printing System (CUPS) in which the IPP attribute is supported or No if the IPP attribute is not supported in any version of CUPS. See "(S)" explained above.

IPP Attribute Description			The IPP attribute name, the attribute syntax (data type) in parenthesizes with a size constraint for strings and integers, a code indicating the IPP object, followed by a brief description of the IPP attribute and what IPP document it is defined in (see References section 6). ***WARNING: Do not attempt to implement from these brief descriptions. You MUST refer to each cited reference. For example, the IPP coordinate system is defined so*** *the terms left, top, right, and bottom in attribute values and descriptions mean as if the document were portrait, i.e., left means the y-axis which is always the long edge and bottom means the x-axis which is always the short edge.*
			 In order to save space, some of the closely related attribute names indicate several alternative fields inside {} and separated by |. For example: halftone-{graphics
				images	text}
					 Legend for codes in square brackets:
					     JD - Job Description attribute - initial value supplied by the client (in an Operation attribute of a Job Creation operation).
					     JT - Job Template[3] attribute - supplied by the client in a Job Creation operation.
					     DD - Document Description attribute (see [doc-obj]) - initial value supplied by the client (in a Operation attribute of a Document Creation operation).
					     DT - Document Template attribute - supplied by the client in a Document Creation operation.
					     PO - Page Override attribute - this attribute MAY also be supplied in a "page-overrides" attribute to affect ranges of pages.
					     JS - Job Status attribute - set by the Printer, client cannot supply (returned by the Printer in a Job object query or Operation attribute). Also indicated by "(S)" in the "IPP Attribute Name" column.
					     DS - Document Status attribute - set by the Printer, client cannot supply (returned by the Printer in a Document object query or Operation attribute). Also indicated by "(S)" in the "IPP Attribute Name" column.
					     - - indicates that there is no corresponding Job Status attribute or Document Status attribute.
					 In attribute names **[job-]** indicates that the 'job-' prefix is kept for the IPP Job Status attribute name but is dropped for the corresponding IPP Document Status attribute name. A single description serves for both using "Job/Document" to indicate that the description applies to both the Job Status and the Document Status attribute. The entry in Table 2 uses the form of the name with the 'job-', since that form is the one in [RFC2911].
					 MS-WORD Styles used: IPP attribute values are bracketed with a single quote (') and indented (style: Normal Val). Member attributes are put in separate rows with no indentation (style: Normal), so that they line up with other entries in other columns.

JDF/1.0 IDPrinting process	89	35%	• Specified the mapping to JDF/1.0 using the IDPrinting combined process. The mapping to IPP is specified in JDF/1.0 Appendix F. The first line is a JDF process. If the first line is not IDPrinting, then the specified process is combined with the IDPrinting combined process node. "N/A" indicates that there is no applicable mapping in JDF/1.0 (without an addition).

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[3] In IPP, there are many attributes that are labeled as both Job Template (JT) and the new Document Template (DT). However, In the PWG Semantic Model [pwg-sm], an attribute is labeled either a Job Processing attribute or a Document Processing attribute, but is never labeled as both. Therefore, IPP attributes labeled with just JT map to PWG Job Processing attributes and IPP attributes labeled with either just DT or both JT and DT map to PWG Document Processing attributes.

Table 2 - IPP Attribute Mapping Table

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
adjust-{cyan-red | magenta-green | yellow-blue}	H		C	ColorIntent/ JDF/ ColorCorrectionParams/ ColorCorrectionOp/ @AdjustCyanRed @AdjustMagentaGreen @AdjustYellowBlue (double(-100:100)) (T) (S) (P) Add integer knob for Print Shop Customers who need quick and dirty last-minute fixes.	ColorCorrection ColorCorrectionParams / ColorCorectionOp/ @AdjustCyanRed @AdjustMagentaGreen @AdjustYellowBlue (double(-100:100)) (T) (S) Add integer knob for Job Submitters who need quick and dirty last-minute fixes.				**adjust-{cyan-red | magenta-green | yellow-blue}** (integer(-100:100)) [JT, DT, PO] Increase or decrease the color along the Cyan/Red, Magenta/Green/ or Yellow/Blue axes while maintaining lightness to be applied at an implementation dependent point in the processing. [color&img] §3.2.1	N/A
adjust-contrast	H	EFI Image Quality – Contrast	6C	ColorIntent/ JDF/ ColorCorrectionParams/ ColorCorrectionOp/ @AdjustConstrast (double(-100:100)) (T) (S) (P)	ColorCorrection ColorCorrectionParams / ColorCorrectionOp/ @AdjustConstrast (double(-100:100)) (T) (S)	No (X)			**adjust-contrast** (integer(-100:100)) [JT, DT, PO] Increase or decrease contrast to be applied at an implementation dependent point in the processing. [color&img] §3.2.2	N/A
adjust-hue	M		C	ColorIntent/ JDF/ ColorCorrectionParams/ ColorCorrectionOp/ @AdjustHue (double(-180:180)) (T) (S) (P)	ColorCorrection ColorCorrectionParams / ColorCorrectionOp/ @AdjustHue (double(-180:180)) (T) (S) apply to all kinds of objects.			1.2	**New IPP attribute:** **adjust-hue** (integer(-180:180)) [JT, DT, PO] Increase or decrease hue by the specified number of degrees of the color circle to be applied at an implementation dependent point in the processing. Mostly useful for synthetic color or single color pages or graphics. What about applying only to graphics? proposed to be added to [color&img].	N/A
adjust-lightness	H	EFI Image Quality – Brightness	6C	ColorIntent/ JDF/	ColorCorrection ColorCorrectionParams / ColorCorrectionOp/	No (X)			**adjust-lightness** (integer(-100:100)) [JT, DT, PO] Increase or decrease color lightness while maintaining colorfulness to be applied at an	N/A

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				ColorCorrectionParams/ ColorCorrectionOp/ @AdjustLightness (double(-100:100)) (T) (S) (P)	@AdjustLightness (double(-100:100)) (T) (S)				implementation dependent point in the processing. [color&img] §3.2.3	
adjust-profile Abstract Profile for preference adjustment	M		C	ColorIntent/ JDF/ ColorCorrectionParams/ ColorCorrectionOp/ FileSpec/ [@ResourceUsage="AbstractProfile"] (T) (S) (P) Add this new file spec to allow specification of preferential color adjustment.	ColorCorrection ColorCorrectionParams / ColorCorrectionOp/ FileSpec/ [@ResourceUsage="AbstractProfile"] (T) (S) Add this new file spec to allow specification of preferential color adjustment.				Proposed new IPP attribute: adjust-profile (uri) [JT, DT, PO] Identifies the Abstract Profile (by URI) for preference adjustment that the Printer MUST fetch and apply after applying the Source Profile before output color rendering, i.e., PCS to PCS'. PDL Objects that are already encoded in final device code values (e.g., actual Device CMYK) MUST NOT be affected. Both the Abstract Profile and the adjustment knobs (integers) can be supplied and applied by the Printer. One important use of this attribute would be for viewing environment adaptations and white point adjustment.. Propose to IPP WG for addition to IPP.	N/A
adjust-saturation	H		C	ColorIntent/ JDF/ ColorCorrectionParams/ ColorCorrectionOp/ @AdjustSaturation (double(-100:100)) (T) (S) (P)	ColorCorrection ColorCorrectionParams / ColorCorrectionOp/ @AdjustSaturation (double(-100:100)) (T) (S)				adjust-saturation (integer(-100:100)) [JT, DT, PO] Increase or decrease the color saturation to be applied at an implementation dependent point in the processing. [color&img] §3.2.4	N/A
anti-aliasing	M	(Anti-aliasing)	6C	ScreeningIntent/ JDF/ RenderingParams/ ObjectResolution/ @AntiAliasing	Rendering RenderingParams/ ObjectResolution/ @AntiAliasing (NMTOKEN)	No (X)			anti-aliasing (type3 keyword) [JT, DT, PO] Indicates the anti-aliasing algorithm that the Printer object MUST apply to the rendered output images. [color&img] §4.1	N/A

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				(NMTOKEN) (T) (S) (P)	(T) (S)					
'none'	M			@AntiAliasing="None" (T)	@AntiAliasing="None" (T)				'none'	
'standard'	M			@AntiAliasing="SystemSpecified" - the Default (T)	@AntiAliasing="SystemSpecified" - the Default (T)				'standard'	
attributes-charset	N			Get from the **encoding=** XML attribute declaration in the XML prolog	Get from the **encoding=** XML attribute declaration in the XML prolog	No	**1.0 jt-charset**	1.1	**attribute-charset** (charset) [JT, DD] This attribute identifies the charset (coded character set and encoding method) used by used by any 'text' and 'name' attributes (1) that the client is supplying in this request and (2) that the Printer SHOULD return in any response.	Get from the encoding= XML attribute declaration in the XML prolog
'utf-8'				utf-8	utf-8				'utf-8'	
'us-ascii'									'us-ascii'	
'iso-8859-1'									'iso-8859-1'	
'iso-10646-ucs-2'									'iso-10646-ucs-2' Note: This value has been deprecated in both ISO10646 and unicode.	
attributes-natural-language	N			NodeInfo/ @NaturalLang	NodeInfo/ @NaturalLang	No	**x.x**	1.1	**attributes-natural-language** (naturalLanguage) [JD, DD] This attribute identifies the natural language used by any 'text' and 'name' attributes (1) that the client is supplying in this request and (2) that the Printer SHOULD return in any response.	IDPrintingParams/ @AttributesNaturalLang
'en-us'				en-us	en-us				'en-us'	'en-us'
black-detection-{graphics | images | text}	H	EFI Image Quality – Black Detection	6 C	ColorIntent/ JDF/ ColorSpaceConversionParams/ ColorSpaceConversionOp/ @RGBGray2Black (boolean) @SourceObjects [Text='text', LineArt or SmoothShades ='graphics',	(ColorSpaceConversion Rendering) ColorSpaceConversionParams/ ColorSpaceConversionOp/ @RGBGray2Black (boolean) @SourceObjects [Text='text', LineArt or SmoothShades ='graphics',				**black-detection-{graphics | images | text}** (boolean) [JT, DT, PO] [Taken from JDF ColorSpaceConversionParams/ColorSpaceConversionOp/RGBGray2Black - which needs work] Controls what happens to gray values (R = G = B) when converting from RGB to CMYK for graphics, images, and text independently. In the case of MS Office applications and screen dumps, there are a number of gray values in the images and line art.	Same as for the DigitalPrinting process. Use the ColorSpaceConversion process combined with the IDPrinting process.

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				ImagePhotographic or ImageScreenShot = 'images'] RenderingParams/ AutomatedOverprint-Params/ @OverPrintBlackLineArt (boolean) @OverPrintBlackText (boolean) (T) (S) (P)	ImagePhotographic or ImageScreenShot = 'images'] RenderingParams/ AutomatedOverprint-Params/ @OverPrintBlackLineArt @OverPrintBlackText (T) (S)				Printers do not want to have CMY under the K (causes registration problems). Therefore, they prefer to have K only, so the Printer converts the gray values to K. Gray values that exceed the corresponding "black-detection-threshold-{graphics | images | text}" value are *not* converted. IPP ISSUE: so does the Printer skip over images when this attribute is true, or must the client supply false for images?	
black-detection-threshold	M		6C	ColorIntent/ JDF/ ColorSpaceConversionParams/ ColorSpaceConversionOp/ [@RGBGray2Black (boolean)="true"] @RGBGray2BlackThreshold (number) @SourceObjects [Text='text', LineArt or SmoothShades ='graphics', ImagePhotographic or ImageScreenShot = 'images'] (T) (S) (P)	ColorSpaceConversion ColorSpaceConversion Params/ ColorSpaceConversion Op/ [@RGBGray2Black (boolean)="true"] @RGBGray2BlackThreshold (number) @SourceObjects [Text='text', LineArt or SmoothShades ='graphics', ImagePhotographic or ImageScreenShot = 'images'] (T) (S)				black-detection-threshold-**{graphics | images | text}** (integer(0:100)) [JT, DT, PO] A value between 0 and 100 which specifies the percentage threshold value above which the Printer must not convert gray (R = G = B) to black (K only) when *RGBGray2Black* is true. So a 0 value means convert only R = G = B = 0 (black) to K only. A 100 value means all values of R = G = B are converted to K if black-detection-**{graphics | images | text}** (boolean) is 'true'. If the client does not supply "black-detection-threshold-{graphics | images | text}" and at the Printer's corresponding "image-detection-threshold-default-{graphics | images | text}" is not configured, the default value is 100. IPP ISSUE: Is black-detection-threshold-**{graphics | images | text}** (integer(0:100)) description OK?	N/A
black-overprint	H	1.1 Black Overprint	6C	ColorIntent/ JDF/ RenderingParams/ AutomatedOverprintParams/ @OverPrintBlackText @OverPrintBlackLine	Rendering RenderingParams/ AutomatedOverprintParams/ @OverPrintBlackText @OverPrintBlackLineArt (S)	Black Overprint (X)			**black-overprint** (type2 keyword) [JT, DT, PO] Turn black overprint on color background on or off. For the 'black-overprint-on' value the Printer MUST place black toner on top of color toner. For the 'black-overprint-off' value the Printer MUST knock out the color background, so that the black toner is not placed on top of color	IDPrinting RenderingParams/ AutomatedOverprintParams/ @OverPrintBlackText RenderingParams/ AutomatedOverprintParams/

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				Art (S) (P)					toner. For the 'black-overprint-pdl' value the Printer MUST use the overprint specified in the PDL document content. IPP ISSUE: Add black-overprint-pdl to IPP.[color&img] §3.33	@OverPrintBlackLineArt
'black-overprint-off''	N			N/A	N/A				'black-overprint-off''	
'black-overprint-on'	H			true	true				'black-overprint-on'	
'black-overprint-pdl'	H			false	false				'black-overprint-pdl'	
color-depth-yyy	L		C	ColorIntent/ JDF/ RenderingParams/ @ColorantDepth (S) (P)	Rendering RenderingParams/ @ColorantDepth Note: In order to control the ColorantDepth by colorant, partition with PartIDKeys="Separation" and specify a separate color for each partition. JDF ISSUE: Is partitioning with PartIDKeys="Separation" the way to specify different color depths for different colors?				**color-depth-yyy** (integer(2:MAX)) [JT, DT, PO] Specifies the color depth (bits per pixel) that the Printer MUST use for colorant "yyy" depending on the colorants supported by the Printer. Values of "yyy" include: black, cyan, magenta, yellow, red, green, blue, cardinal, royal, ruby, violet, and brown. [color&img] §3.4	IDPrinting RenderingParams/ @ColorantDepth
color-destination-profile-back	H		C	Print shop customers need to be able to specify ColorIntent/ JDF/ ColorSpaceConversionParams/ FileSpec [@ResourceUsage="FinalTargetDevice"]/ URL (S) (P) Note: Partition with PartIDKeys="Side" with values: "Front"	ColorCorrection ColorCorrectionParams / FileSpec [@ResourceUsage="FinalTargetDevice"]/ URL or ColorSpaceConversion ColorSpaceConversionParams/ FileSpec [@ResourceUsage="FinalTargetDevice"]/ URL (S)				**color-destination-profile-back** (type3 keyword	name(MAX)) [JT, DT, PO] Specifies the Destination Color Space Profile that the Printer is to use for the back side of the output media. [color&img] §3.5.1	ColorCorrection ColorCorrectionParams/ FileSpec [@ResourceUsage="FinalTargetDevice"]

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				and "Back" to get different Profiles for front and back of sheets.	ICS ISSUE: Do we really need the ColorSpaceConversion for our mapping and subset for use with the DigitalPrinting process too? Note: Partition with PartIDKeys="Side" with values: "Front" and "Back" to get different Profiles for front and back of sheets. ICS ISSUE: What is the difference between ColorCorrection and ColorSpaceConversion? ICS ISSUE: Do we need to specify both in the ICS? JDF ISSUE: Can both processes be used with FinalTargetDevice in the same Job Ticket? JDF ISSUE: How map IPP named color spaces to JDF? Use a URL to the ICC web site?					
'system-specified'				???	???				'system-specified'	
any name				URL=*value*	URL=*value*				*any name*	
color-destination-profile-front	H		C	Print shop customers need to be able to specify ColorIntent/ JDF/ ColorSpaceConversionParams/ FileSpec	ColorCorrection ColorCorrectionParams / FileSpec [@ResourceUsage="FinalTargetDevice"]/ URL or ColorSpaceConversion,				**color-destination-profile-front** (type3 keyword | name(MAX)) [JT, DT, PO] Specifies the Destination Color Space Profile that the Printer is to use for the front side of the output media. [color&img] §3.5.2	ColorCorrection ColorCorrectionParams/ FileSpec [@ResourceUsage="FinalTargetDevice"]

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				[@ResourceUsage=" FinalTargetDevice"]/ URL (S) (P) Note: Partition with PartIDKeys="Side" PartIDKeys="Side" with values: "Front" and "Back" to get different Profiles for front and back of sheets. ISSUES: Same as above.	ColorSpaceConversion Params/ FileSpec [@ResourceUsage="Fi nalTargetDevice"] / URL (S) Note: Partition with PartIDKeys="Side" PartIDKeys="Side" with values: "Front" and "Back" to get different Profiles for front and back of sheets. ISSUES: Same as above.					
'system-specified'				???	???				'system-specified'	
any name				*value of URL attribute*	*value of URL attribute*				*any name*	
color-effects-type	H	1.1 Color Mode EFI Color – Color Mode	6 C	ColorIntent/ @ColorStandard OR ProofingIntent/ ProofItem/ @ColorType If omitted, render as indicated in the PDL.	DigitalPrinting, ColorSpaceConversion ColorantControl/ @ProcessColorModel	Process Color Model (X)			**color-effects-type** (type2 keyword) [JT, DT, PO] Indicates whether the Printer is to render a color document in full color or using an algorithm that maps the full range of colors to alternate values, such as gray scale or monochrome. [color&img] §3.6	IDPrinting ColorantControl/ @ProcessColorMo del
'monochrome-grayscale'				@ColorStandard="M onochrome" (JDF/1.1) @ColorStandard="Gr ayScale" (JDF/1.2) OR @ColorType="Monoc hrome" (JDF/1.1) @ColorType="GrayS cale" (JDF/1.2)	DeviceGray				'monochrome-grayscale'	DeviceGray

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
'color'		MYK		@ColorStandard="CMYK" OR omitted or @ColorType="BasicColor" | "MatchedColor"	DeviceCMYK				'color'	DeviceCMYK
color-emulation	H		C	ColorIntent/ @ColorStandard AND/OR JDF/ Ink/ @Family OR ColorIntent/ JDF/ ColorSpaceConversionParams/ FileSpec [@ResourceUsage="FinalTargetDevice"]/ URL (S) (P) If both ColorStandard and URL are supplied, the FinalTagretDevice profile gives the details of the ColorStandard value.	**DigitalPrinting** Ink/ @Family ICS ISSUE: Is Ink/Family the right mapping for color emulation? OR ColorSpaceConversion **ColorSpaceConversionParams/** FileSpec/ [@ResourceUsage="FinalTargetDevice"]/ URL OR ColorSpaceConversion **ColorSpaceConversionParams/** LayoutElement/ ElementColorParams/ FileSpec/ [@ResourceUsage="*ReferenceOutputProfile*"]/ URL (T) OR ColorSpaceConversion **ColorSpaceConversionParams/**				**color-emulation** (type3 keyword | name (MAX)) [JT, DT, PO] Causes the Printer to emulate the output of a different color-printing device. [color&img] §3.7	**IDPrinting** Ink/@Family ColorSpaceConversion, Proofing, SoftProofing **ColorSpaceConversionParams/** FileSpec/ [@ResourceUsage="FinalTargetDevice"] Specify new values for @ResourceUsage = "FinalTargetDevice"

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
					LayoutElement/ ElementColorParams/ FileSpec/ [@ResourceUsage="ActualOutputProfile"]/ URL (T)					
'none'				@ColorStandard="CMYK"	omit.				'none' - No emulation is applied in the printer; the Printer's native color information is used.	TBD
'swop'				@ColorStandard="SWOP" Same as: ICC:CGATSTR001 (T) OR @Family="SWOP" (T)	@Family="SWOP"				'swop' - Emulate the CMYK SWOP (*i.e. Standard Web Offset Press*) ink color gamut when printed on coated media (see [SWOP] for technical specifications and overviews).	TBD
'euroscale'				@ColorStandard="*ICC:OFCOMPOP1F60*" (T) OR @Family="EURO"	@Family="EURO"				'euroscale' - Emulate the European ink color gamut standard for offset presses when printed on coated media (European equivalent to the US SWOP standard [SWOP] – has been superseded by the FOGRA European Press Standard of the German Graphic Arts Research Institute).	TBD
'japan-color'				@ColorStandard="JapanColor2001" (T) OR @Family="TOYO" JDF ISSUE: Is Ink/@Family=TOYO equivalent to IPP 'japan-color'	@Family="TOYO" JDF ISSUE: Is Ink/@Family=TOYO map from IPP 'japan-color'				'japan-color' - Emulate the color gamut of the combined/common Dianippon and Toyo Inks standard when printed on coated media.	TBD
'enhanced-swop'				@ColorStandard="???" JDF ISSUE: What is	@Family="???" JDF ISSUE: What Ink Family value equivalent				'enhanced-swop' - Emulate a more saturated version of the CMYK SWOP [SWOP] color	TBD

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				the ColorStandard equivalent to IPP 'enhanced-swop'? OR @Family=??? JDF ISSUE: What Ink Family value equivalent to 'enhanced-swop'?	to 'enhanced-swop'?				gamut when printed on coated media.	
'euroscale-matte'				@ColorStandard="ICC:OFCOMPOP2F60"(T) OR @Family=???JDF ISSUE: What Ink Family value is equivalent to 'euroscale-matte'?	@ColorStandard="ICC:OFCOMPOP2F60"(T)				'euroscale-matte' - Emulate the color gamut of European inks placed on matte finish media.	TBD
'euroscale-uncoated'				@ColorStandard="ICC:OFCOMPOP2F60"(T) JDF ISSUE: Is ColorStandard="ICC:OFCOMPOP2F60"the correct equivalent to IPP 'euroscale-uncoated'? If NOT we need to propose to CIP4 for JDF/1.3. OR @Family=???JDF JDF ISSUE: What Ink Family value is equivalent to 'euroscale-uncoated'?	JDF ISSUE: Is this the correct equivalent for IPP 'euroscale-uncoated'? If NOT we need to propose to CIP4 for JDF/1.3. ICC:OFCOMPOP2F60 (T)				'euroscale-uncoated' - Emulate the color gamut of European inks placed on uncoated media.	TBD

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
compression Note: This is document compression.	H 4		3	ArtDeliveryIntent/ ArtDelivery/ RunList/ LayoutElement/ FileSpec/ @Compression (S)	LayoutPreparation RunList/ LayoutElement/ FileSpec/ @Compression (S)	Document Compression (X)	**1.0 job-compression x.x document-compression**	1.1	**compression** (type2 keyword) [JD, DD] Compression algorithm used on the Document Data for this Job/Document, if any. (Keywords: none, deflate, gzip, compress) [RFC2911] §4.4.32	RunList/ LayoutElement/ FileSpec/ @Compression
'none'				None	None	Yes (X)				'none'
'deflate'				Deflate	Deflate	Yes (X)				'deflate'
'gzip'				Gzip	Gzip	Yes (X)				'gzip'
'compress'				Compress	Compress	Yes (X)				'compress'
copies (M)	H	1.1 Number of Copies: Quantity EFI Finishing - Copies	4	ComponentLink [@Usage="Output"] [@ProcessUsage="Good"]/ @Amount (S)	DigitalPrinting ComponentLink [@Usage="Output"] [@ProcessUsage="Good"]/ @Amount (S)	Number of Copies (X)	**@ job-copies x.x document-copies**	1.1	**copies** (integer(1:MAX)) [JT5, DT] The number of copies of the Output Document(s) to be printed. [RFC2911] §4.2.5	ComponentLink[@ ProcessUsage="Good"]/ @Amount
cover-back (M) note: cover could be printed or preprinted/blank	H	EFI Media - Back Cover	5	**Preprinted/blank cover:** LayoutIntent/ @Sides Layout/ InsertSheet/ @SheetType="InsertSheet" @SheetUsage="Trailer" Sheet/ Media/ **Printed cover:** MediaIntent, LayoutIntent/ @Sides Layout/ Media/	**Preprinted/blank cover:** LayoutPreparation LayoutPreparationParams/ @Sides RunList/ @Pages (range *before* the insert sheet) LayoutElement/ InsertSheet/ @SheetType="InsertSheet" @SheetUsage="Trailer" RunList/ @PageCopies Sheet/ Media/	Covers (Media, Sides, Start First Page) (X)	**1.0 see xxx-media see xxx-sides see xxx-force-pages see po-pages see insert-sheet-media see insert-sheet-pages see insert-sheet-position**	1.2	**cover-back** (collection) [JT6, DT] The back cover to apply to the Output Document. [prod-print] §3.1	IDPrinting IDPrintingParams/ Cover [@CoverType= "Back"]

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4 At a minimum the "none" value for compression must be supported.

5 The IPP "copies" attribute is an *extensive* attribute, so its effect when supplied at the job level is not always inherited by the documents in a multi-document job. Instead, its effect depends on the value of the "multiple-document-handling" Job Template attribute. The 'single-document' and 'single-document-new-sheet' values produce copies of the job as a whole with the multiple input documents concatenated into a single output document for each job copy. The 'separate-document-uncollated-copies' value produce N copies of the first input document followed by N copies of the second input document, etc. The 'separate-document-collated-copies' produce N successive job copies, each job copy consisting of 1 copy of the first document followed by 1 copy of the second document, etc. In the PWG Semantic Model [pwg-sm] there are two separate attributes: JobCopies and Copies which affect the job as a whole and individual documents, respectively, so that the MultipleDocumentHandling is no longer needed.

6 The "cover-back" and "cover-front" Job Template attributes are affected by the value of "multiple-document-handling" which controls whether a multi-document job is producing a single Output Document or separate Output Documents.

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				(S) ICS ISSUE: Should there be a way to specify Covers as Product Description at a high level, say using BindingIntent?	**Printed cover:** LayoutPreparation LayoutPreparationParams/ @Sides @RunIndex | DocRunIndex (S) ICS ISSUE: Check ICS and add IncludeInBundleItem?					
cover-type						Yes (X)			**cover-type** (type2 keyword) Indicates if covers are requested and which sides will contain print stream pages. (Keywords: no-cover, print-none, print-front, print-back, print-both) [prod-print] §3.1.2	IDPrintingParams/ Cover [@CoverType= "Back"]
'print-none'				**Preprinted/blank cover:** @SheetFormat="blank"	**Preprinted/blank cover:** @Pages="0~-1"	Yes (X)			'print-none'	[@Frontside=false @Backside=false]
'print-front'				@Sides="OneSided" RunIndex="-1"	@Sides="OneSided" RunIndex | DocRunIndex ="-1"	Yes (X)			'print-front'	[@Frontside=true @Backside=false]
'print-back'				@Sides="OneSidedBack" RunIndex="-1"	@Sides="OneSidedBackFlipY" RunIndex | DocRunIndex ="-1"	Yes (X)			'print-back'	[@Frontside=false @Backside=true]
'print-both'				@Sides="TwoSidedHeadToHead" RunIndex="-2~-1"	@Sides="TwoSidedFlipY" RunIndex | DocRunIndex ="-2~-1"	Yes (X)			'print-both'	[@Frontside=true @Backside=true]

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
media OR:				MediaIntent/ @CatalogID	Media/ @CatalogID OR RunList/ InsertSheet/ Media/ Location/ @LocationName=*input tray name*	No (X)			**media** (type3 keyword | name(MAX)) The descriptive name or the name of the input tray containing the media to use for the back cover. See "media" on page 56. [prod-print] §3.1.1	See IPP "media" attribute on page 56.
media-col				MediaIntent/	Media/	Yes (X)			**media-col** (collection) **Characteristics of the media to use for the** back **cover.** See "media-col" on page 58. [prod-print] §3.1.1	See IPP "media-col" attribute on page 58.
cover-front (M) note: cover could be printed or preprinted/blank	H	EFI Media – Front Cover	5	**Preprinted/blank cover:** LayoutIntent/ @Sides Layout/ InsertSheet/ @SheetType="Insert Sheet" @SheetUsage="Header" Sheet/ Media/ **Printed cover:** MediaIntent, LayoutIntent/ @Sides Layout/ Media/ (S) ICS ISSUE: Should there be a way to specify Covers as Product Description at a high level, say, BindingIntent? (N)	**Preprinted/blank cover:** LayoutPreparation LayoutPreparationPara ms/ @Sides RunList/ @Pages (range *after* the insert sheet) LayoutElement/ InsertSheet/ @SheetType="InsertSh eet" @SheetUsage="Heade r" @PageCopies Sheet/ Media/ **Printed cover:** LayoutPreparation LayoutPreparationPara ms/ @Sides @RunIndex | DocRunIndex (S) ICS ISSUE: Check ICS	see cover-back Yes (X)	**1.0 see cover-back**	1.2	**cover-front** (collection) [JT, DT] The front cover to apply to the Output Document. [prod-print] §3.1	IDPrintingParams/ Cover [@CoverType="Fro nt"]

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
					and add IncludeInBundleItem?					
cover-type						Yes (X)			**cover-type** (type2 keyword) Indicates if covers are requested and which sides will contain print stream pages. prod-print] §3.1.2	IDPrintingParams/ Cover [@CoverType= "Front"]
'print-none'				@SheetFormat="blank"	@Pages="0~-1"	Yes (X)			'print-none'	[@Frontside=false @Backside=false]
'print-front'				@Sides="OneSided" RunIndex="0"	@Sides="OneSided" RunIndex="0"	Yes (X)			'print-front'	[@Frontside=true @Backside=false]
'print-back'				@Sides="OneSidedBack" RunIndex="0"	@Sides="OneSidedBackFlipY" RunIndex="0"	Yes (X)			'print-back'	[@Frontside=false @Backside=true]
'print-both'				@Sides="TwoSidedHeadToHead" RunIndex="0~1"	@Sides="TwoSidedFlipY" RunIndex="0~1"	Yes (X)			'print-both'	[@Frontside=true @Backside=true]
media				MediaIntent/ @CatalogID	Media/ @CatalogID OR RunList/ InsertSheet/ Media/ Location/ @LocationName=*input tray name*	No (X)			**media -** Name of the media to use for the front cover. [prod-print] §3.1.1	See IPP "media" attribute on page 56.
media-col				MediaIntent/	Media/	Yes (X)			**media-col -** Characteristics of the media to use for the front cover. [prod-print] §3.1.1	See IPP "media-col" attribute on page 58.
current-page-order (S)	N			N/A	N/A	No	**x.x**	1.2	**current-page-order** (type2 keyword) [JS, DS] Indicates the page order of the pages in the document data for this Job/Document. The Printer set this value set from the supplied "page-order-received" Template attribute and updates the value if the Printer reverses the pages of the Document. See also the "page-delivery" Template attribute. (Keywords: 1-to-n-order, n-to-1-order) [prod-print] §4.1	N/A
date-time-at-completed (S)	N			N/A	AuditPool/ ProcessRun/	No	**x.x**	1.1	**date-time-at-completed** (dateTime) [JS, DS] Indicates the date and time	N/A

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
					@End @Start				at which this Job/Document completed. (example: Fri, 03 May 2002 08:49:37 GMT) [RFC2911] §4.3.14.7	
date-time-at-creation (S)	L			AuditPool/ Created/ @TimeStamp (S)	AuditPool/ Created/ @TimeStamp (S)	No (X)	**x.x job-create-date-time**	1.1	**date-time-at-creation** (dateTime) [JS, DS] Indicates the date and time at which this Job/Document was created. (example: Fri, 03 May 2002 08:49:37 GMT) [RFC2911] §4.3.14.5	N/A
date-time-at-processing (S)	N			N/A	AuditPool/ PhaseTime/ @End @Start @Status="Ready" (N) JDF ISSUE (Darmstadt): A ProcessRun Audit can only be added when the Job completes and MUST have both Start and End date-times filled in (and EndStatus). So need to use PhaseTime instead in order to record when a Job starts processing, i.e. ends the Phase with Status="Ready" and starts with Status="InProgress". But JDF/1.2 needs Ready added to the PhaseTime/@Status enumeration. Look at Duration infinite in TBD file.	No	**x.x**	1.1	**date-time-at-processing** (dateTime) [JS, DS] Indicates the date and time at which this Job/Document first began processing. (example: Fri, 03 May 2002 08:49:37 GMT) [RFC2911] §4.3.14.6	N/A
detailed-status-message (S)	N			N/A	AuditPool/ Notification/ @Class="Event" @Type="Event" (T) @Comment=*message*	No	**Never**		**detailed-status-message** (text(MAX)) [JS, DS] Provides additional more detailed technical and implementation-specific information about the processing that has been performed by the operation and is returned in the operation response.	JMF/ Response/ Notification/ Comment or JMF/ Response/ Notification/

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
									returned in the operation response. The Printer NEED NOT provide localized versions. [RFC2911] §3.1.6.3	NotificationDetails/ Comment
document-format	H		3	ArtDeliveryIntent/ ArtDelivery/ RunList/ LayoutElement/ FileSpec/ @MimeType (S)	LayoutPreparation RunList/ FileSpec/ @MimeType (S)	Document File Format (X)	**@ job-document-format x.x document-format**	1.1	**document-format** (mimeMediaType) [JD, DD] The Document format (i.e., PDL) for this Document. The value "application/octet-stream" has a special meaning. This value is used to indicate that a Printer is capable of auto-sensing the format of the Document. [RFC2911] §3.2.1.1	RunList/ LayoutElement/ FileSpec/ @MimeType
'text/plain'				text/plain	text/plain	Yes (X)			'text/plain'	
'text/plain; charset=US-ASCII				text/plain; charset=US-ASCII	text/plain; charset=US-ASCII	?			'text/plain; charset=US-ASCII	
'application/postscript'				application/postscript	application/postscript	Yes (X)			'application/postscript'	
'application/vnd.hp-PCL'				application/vnd.hp-PCL	application/vnd.hp-PCL	Yes (X)			'application/vnd.hp-PCL'	
'image/tiff'				image/tiff	image/tiff	Yes (X)			'image/tiff'	
'application/pdf'				application/pdf	application/pdf	Yes (X)			'application/pdf'	
'application/octet-stream'				application/octet-stream	application/octet-stream	Yes (X)			'application/octet-stream'	
document-name	L		10	ArtDeliveryIntent/ ArtDelivery/ RunList/ LayoutElement/ FileSpec/ @UserFileName (S)	LayoutPreparation RunList/ LayoutElement/ FileSpec/ @UserFileName (S)	No (X)	**x.x**	1.1	**document-name** (name(MAX)) [JD, DD] Name for the this Document to be used in an implementation specific manner. [RFC2911] §3.2.1.1	RunList/ LayoutElement/ FileSpec/ @UserFileName
document-natural-language	N		3	ArtDeliveryIntent/ ArtDelivery/ RunList/ LayoutElement/ FileSpec/ @DocumentNaturalLang (S)	LayoutPreparation RunList/ LayoutElement/ FileSpec/ @DocumentNaturalLang (S)	Document Natural Language (X)	**1.0 job-document-natural-language x.x document-document-natural-language**	1.1	**document-natural language** (naturalLanguage) [JD, DD] Identifies the Natural Language of this Document [RFC2911] §3.2.1.1	LayoutElement/ FileSpec/ @DocumentNaturalLang
document-number (S)	L			PartIDKeys = "DocIndex"	PartIDKeys = "DocIndex"		**x.x**		**document-number** (integer(0:MAX)) [-, DS] The order of this Document within the Job starting at a base of 1. [doc-obj] §6.1	N/A
document-overrides (M)	H	See specific attributes for category.		Partition using DocIndex to specify document overrides.	Partition using DocIndex to specify document overrides.	(X)	**Never (use Document object)**	No ??	**document-overrides** (collection) [JT] Provides for the overriding of processing instructions on a	To specify IPP Page or Document overrides, a JDF

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				(S)

See individual feature/function that is valid at the document level | (S)

See individual feature/function that is valid at the document level | | | | document basis. Applied to job, see PageOverrides for overrides supplied at the document level. [override] §5.1 | file must use the partitioning mechanism described in the section Subsets of Resources. See JDF/1.0 App F.18 using the indicated partition keys: |
input-documents						Yes??	**Never**		**input-documents** (1setOf rangeOfInteger(MAX)) Specifies which range of Input Documents to apply document override processing. [override] §5.1.1	RunIndex
document-copies						No	**Never**		**document-copies** (1setOf rangeOfInteger(MAX)) Specifies which copies of an Output Document to apply these document override attributes. (Example: {{document-copies=1:1, sides=single-sided, media=transparency}, document-copies=2:10, sides=two-sided-long, media=na-letter}} prints the first document copy on transparencies and the remaining copies on two-sided letter paper) [override] §5.1.3	DocCopies
document-format						Yes	**Never** use document object' document-format		**document-format** (mimeMediaType) Specifies the document format for the Input Document override processing. [override] §5.1.4	RunList/ LayoutElement/ FileSpec/ @MimeType
document-name						No	**Never**		**document-name** (name (MAX)) Specifies the document name for the Input Document override processing.. [override] §5.1.5	RunList/ LayoutElement/ FileSpec/ @UserFileName
compression						No	**Never**		**compression** (type3 keyword) Specifies the compression for the Input Document override processing. [override] §5.1.6	N/A
document-natural-language						No	**Never**		**document-natural-language** (naturalLanguage) Specifies the natural language for the Input Document override processing [override] §5.1.7	LayoutElement/ FileSpec/ @DocumentNatura lLang
page-ranges						Yes	**Never**		**page-ranges** (1setOf rangeOfInteger	Runlist

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
							use document object's document-output-pages		(1:MAX)) Specifies the range of pages to be printed in the Document sets. [override] §5.1.8	
<any other document (DT) attr.> OR:						Yes??	**Never** see corresponding document (DT) attribute		*<any other document (DT) attr.>*	Yes
output-documents						Yes??	**Never**		**output-documents** (1setOf rangeOfInteger(MAX)) Specifies which range of Output Documents to apply document override processing. [override] §5.1.2	DocIndex
document-copies						No	**Never**		**See "document-copies" member attribute above.**	DocCopies
<any other document (DT) attr.>						Yes??	**Never**		<any other document (DT) attr.>	Yes
document-state (S)	L			Unknown	Unknown		**x.x**		**document-state** (type1 enum) [-, DS] The current state of this Document. See also "document-state-reasons" attribute below. [doc-obj] §6.3.2	
'pending'									'pending'	
'processing'									'processing'	
'canceled'									'canceled'	
'aborted'									'aborted'	
'completed'									'completed'	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
document-state-message (S)	L			Unknown	Unknown		**x.x**		**document-state-message** (text(MAX)) [-, DS] Specifies information about the "document-state" and "document-state-reasons" attributes of this Document in human readable text. The Printer localizes the text according to the natural language supplied in the client's query request. (example: "Document completed successfully with warnings" for an English request) [doc-obj] §6.7	
document-state-reasons (S)	L			Unknown	Unknown		**x.x**		**document-state-reasons** (1setOf type2 keyword) [-, DS] Provides additional information about this Document's current state. (Keywords: none, aborted-by-system, canceled-at-device, canceled-by-operator, canceled-by-user, completed-successfully, completed-with-errors, completed-with-warnings, compression-error, document-access-error, document-format-error, incoming, interpreting, outgoing, printing, queued, queued-for-marker, queued-in-device, resources-are-not-ready, resources-are-not-supported, spooling, streaming, submission-interrupted, transforming, unsupported-compression, unsupported-document-format, warnings-detected) [doc-obj] §6.5	
document-uri	H	1.1 PPML file EFI Document List	3	ArtDeliveryIntent/ ArtDelivery/ RunList/ FileSpec/ @URL (S)	LayoutPreparation RunList/ LayoutElement/ FileSpec/ @URL (S)	Document File Name (X)	**@ document-uri**	1.1	**document-uri** (uri) [DD] Specifies the URI reference to the document data to be printed. The Printer fetches the data subsequent to the Document Creation operation (print-by-reference). [RFC2911] §3.2.2	RunList/ LayoutElement/ FileSpec/ @URL
edge to edge printing	H		C	XxxxIntent/ JDF/ DigitalPrintingParams/ @NonPrintableMarginBottom	DigitalPrinting DigitalPrintingParams/ @NonPrintableMarginBottom @NonPrintableMarginLeft	Margins (X)	**1.0 job-margin-bottom 1.0 job-margin-left 1.0 job-margin-top**		**ISSUE: Change IPP name from bleed-edge-printing to: edge-to-edge** (type2 keyword) [JT, DT, PO] Indicates whether or not the printer should allow page image data to be printed to all edges of the paper,	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				@NonPrintableMarginLeft @NonPrintableMarginRight @NonPrintableMarginTop (number) (T) (S) (P) ICS ISSUE: What XxxxIntent should this be under? ScreenIntent? ICS ISSUE: Or is there some BoundingBox value to use instead?	@NonPrintableMarginRight @NonPrintableMarginToop (number) (S) (T) Number size of non-printable margin in points		1.0 job-margin-right x.x document-margin-bottom x.x document-margin-left x,x document-margin-top x.x document-margin-right x.x po-margin-bottom x.x po-margin-left x.x po-margin-top x.x po-margin-right		and print beyond the edges of the normal printable area. [color&img] §4.2 IPPISSUE: or add "non-printable-margins" with four integer values.	
'none'	H				omit from ticket	Yes (X)			'none'	
'all'	H				@NonPrintableMarginBottom="0" @NonPrintableMarginLeft="0 @NonPrintableMarginRight="0 @NonPrintableMarginToop="0 (T)	Yes (X)			'all'	
feed-orientation	H		9	N/A	MediaLink/ [@Usage="Input"] @Orientation ICS ISSUE: Is this really how to represent the concept of feed orientation? Or should the Usage attribute value be "Intermediate" in case the Media attribute isn't first in the combined process chain?	Feed Orientation (X)	1.0 job-feed-orientation x.x document-feed-orientation		feed-orientation (type3 keyword) [JT, DT] Specifies the media edge which is fed into the print engine from the paper tray. Needed only when a different edge from the edge the Printer would pick given the media and the PDL orientation, such as to prevent peeling labels when the Printer pulled the normal (long) edge first. [prod-print2] §5.1	MediaLink/@Orientation
'long-edge-first'					omitted (default) or @Orientation="Rotate0				'long-edge-first'	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
					"					
'short-edge-first'					@Orientation="Rotate90" ICS ISSUE: Is the paper movement really toward the X-axis in the idealized coordinate system? If yes, then the value of Orientation depends on whether the Media is dimensioned Y>X or X>Y. For production printings, long edge first is the more likely default and is more likely to be the Y-axis.				'short-edge-first'	
finishings (M)	H	1.1 Stapling EFI Stapler Mode	8	See specific attribute value below		Stapling & Stitching (X)	@ job-stitching x.x document-stitching x.x po-stitching 1.0 stitching-count 1.0 stitching-reference-edge @ stitching-type	1.1	**finishings** (1setOf type2 enum) [JT[7], DT, PO] Identifies the finishings that the Printer uses for each copy of the Output Document. The coordinate system (left, top, right, bottom) is relative to the edges as if the document were portrait, so left is the y-axis and bottom is the x-axis. [RFC2911] §4.2.6, [finishing] §2, [finishing2] §3.	Yes
'none'					NoOp="False"				'none'	
'bale'	N			N/A	N/A	No	**Never**	1.1	'bale'	Yes
bale - Turn off	N					No	**Never**		'none', else 'xxx' |= 'bale-yyy'	
'bind'	H		8	BindingIntent/ @BindingType="CornerStitch"	"SaddleSttich"	"SideSttich"	"SoftCover" @BindingSide="Left"	"Top"	"Right"	"Bottom"	CoverApplication CoverApplicationParams OR SpineTaping SpineTapingParams (S)	Binding (X)	**1.0 job-binding**	1.1	'bind'	Yes

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[7] The IPP "finishings" and "finishings-col" attributes are *extensive* attributes, so their effect when supplied at the job level is not always inherited by the documents in a multi-document job. Instead, their effect depends on the value of the "multiple-document-handling" Job Template attribute. The 'single-document' and 'single-document-new-sheet' cause the finishing to be applied to each job copy as a whole. The 'separate-documents-collated-copies' and 'separate-document-uncollated-copies' values cause the finishing to be applied to each document. In the PWG Semantic Model [pwg-sm] there are two separate attributes: JobFinishings and Finishings and also JobFinishingsCol and FinishingsCol which affect the job as a whole and individual documents, respectively, so that the MultipleDocumentHandling attribute is no longer needed.

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				, (JDF/1.1) OR omit: BindingIntent/ @BindingType=*any value* , ICS ISSUE: SettingsPolicy=BestEffort will get some sort of binding, OK? (JDF/1.2 optional)						
binding - Turn off	L		8	omit BindingIntent	BindingParams/ @NoOp	Binding (X)	**1.0 job-binding x.x document-binding x.x po-binding 1.0 binding-type=NONE**		'none', else 'xxx' |= 'bind-yyy'	
'bind-left'	H	EFI Binding	8	BindingIntent/ @BindingType="CornerStitch" | "SaddleSttich" | "SideSttich" | "SoftCover" @BindingSide="Left"	CoverApplication CoverApplicationParams CoverApplicationParamsLink/ OR SpineTaping SpineTapingParams	Binding (X)	**1.0 job-binding x.x document-binding x.x po-binding 1.0 binding-reference-edge x.x binding-type**	No	'bind-left'	Yes
'bind-right'	H			BindingIntent/ @BindingType="CornerStitch" | "SaddleSttich" | "SideSttich" | "SoftCover" @BindingSide="Right"	CoverApplication CoverApplicationParams ComponentLink/ [@Usage="Intermediate"] @Orientation="Rotate180" (T) OR SpineTaping SpineTapingParams				'bind-right'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
					ComponentLink/ [@Usage="Intermediate"] @Orientation="Rotate180" (T)					
'bind-bottom'	H			BindingIntent/ @BindingType="CornerStitch" | "SaddleSttich" | "SideSttich" | "SoftCover" @BindingSide="Bottom"	CoverApplication CoverApplicationParams ComponentLink/ [@Usage="Intermediate"] @Orientation="Rotate270" (T) OR SpineTaping SpineTapingParams ComponentLink/ [@Usage="Intermediate"] @Orientation="Rotate270" (T)				'bind-bottom'	
'bind-top'	H			BindingIntent/ @BindingType="CornerStitch" | "SaddleSttich" | "SideSttich" | "SoftCover" @BindingSide="Top"	CoverApplication CoverApplicationParams ComponentLink/ [@Usage="Intermediate"] @Orientation="Rotate90" (T) OR SpineTaping SpineTapingParams ComponentLink/ [@Usage="Intermediate"] @Orientation="Rotate90"				'bind-top'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
					(T)					
'booklet-maker'	M	1.1 Bookletmaking	7 8	BindingIntent/ @BindingType="Sad dleSttich"		NumberUp (X)Stapling & Stitching (X) Folding (X)	**1.0 see xxx-number-up-x and xxx-number-up-y 1.0 see xxx-stitching 1.0 see xxx-folding**	No	'booklet-maker', 'booklet-fold-staple'[8]	Yes
cover Note: Use cover-front and cover-back	N		5	see cover-back & cover-front	see cover-back & cover-front	Covers (X)	**1.0 see cover-front & cover-back**	1.1	*See "cover-front" and "cover-back"*	Yes
fold catalog	H 9	1.1 Folding EFI Finishing - Folding	8	FoldingIntent/ @FoldingCatalog (S)	Folding FoldingParams/ @DescriptionType="Fol dCatalog" @FoldCatalog (S)	Folding (X)	**1.0 job-folding x.x document-folding x.x po-folding 1.0 folding-type 1.0 folding-reference-edge**	1.1	'fold-xxx' value of "finishings" attribute	Yes
SystemSpecified	H			N/A	Folding FoldingParams/ @DescriptionType="Fol dCatalog" (omit optional FoldCatalog)				'fold'	
	H			@FoldingCatalog=P6 -4 (C-fold in thirds) (T)	@FoldCatalog=F6-4 (C-fold in thirds)				'fold-c-short-in-thirds-sheet'	
	H			@FoldCatalog=P6-1 OR P6-2 (Z-fold in thirds) (T)	@FoldCatalog=F6-1 OR F6-2 (Z-fold in thirds)				'fold-z-short-in-thirds-sheet'	
	H			@FoldingCatalog=P6 -6 (Z-fold with short) (T)	@FoldCatalog=F6-6 (Z-fold with short) (T)				'fold-z-short-sheet'	
	H			@FoldingCatalog=P4 -1 (saddle-fold) (T)	@FoldCatalog=F4-1 (saddle-fold)				'booklet-fold'	
folding - Turn off	H	1.1 Folding	8	FoldingIntent/ @FoldingCatalog="F 2-1"	Folding FoldingParams/ @NoOp	Folding (X)	**1.0 job-folding x.x document-folding**		'none', else 'xxx' |= 'fold-yyy'	

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[8] The "finishings" = 'booklet-fold-staple' is the same as 'booklet-maker', but without trimming.
[9] Only support specific folding catalogs (e.g z-fold, saddle-fold, etc.)

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				(T)			**x.x po-folding 1.0 folding-type=NONE**			
Hole Pattern Catalog				HoleMakingIntent/ @HoleType (S)	HoleMaking HoleMakingParams/ @HoleType (S)	Punching & Hole Making (X)			'punch-xxx' value of "finishings" attribute which can be pre-punched or punched by the Printer depending on implementation.	
system specified	H	1.1 HoleMaking		HoleMakingIntent/ @HoleType="R-generic" (T)	HoleMaking HoleMakingParams/ @HoleType="R-generic" (T)	Yes (X)	**1.0 job-hole-making x.x document-hole-making x.x po-hole-making**	1.1	'punch'	Yes
two holes	H			@HoleType="R2-generic"	@HoleType="R2-generic"	Yes (X)		1.1	'punch-2-hole'	
three holes	H			@HoleType="R3-generic"	@HoleType="R3-generic"	Yes (X)		1.1	'punch-3-hole'	
four holes	H			@HoleType="R4-generic"	@HoleType="R4-generic"	Yes (X)		1.1	'punch-4-hole'	
hole making - Turn off	H	1.1 HoleMaking	8	Leave out HoleMakingIntent	HoleMaking HoleMakingParams/ @NoOp	Punching & Hole Making (X)	**1.0 job-hole-making x.x document-hole-making x.x po-hole-making 1.0 hole-making-count=0**		'none', else 'xxx' |= 'punch-yyy'	
Hole making that allows specification of number of holes and reference edge	H	1.1 HoleMaking	8	HoleMakingIntent/ @HoleType @HoleReferenceEdge="Left"	"Top"	"Right"	"Bottom" (S)	HoleMaking HoleMakingParams/ @HoleType @HoleReferenceEdge="Left"	"Top"	"Right"	"Bottom" (Dep in JDF/1.2) (S) OR HoleMaking HoleMakingParams/ @HoleType ComponentLink/ [@Usage="Intermediate"]	Punching & Hole Making (X)	**1.0 job-hole-making x.x document-hole-making x.x po-hole-making 1.0 hole-making-count 1.0 hole-making-reference-edge**		No IPP attribute Note: hole-making-count maps to punch-2-hole, punch-3-hold, punch-4-hole. IPP ISSUE: Should we add a punching collection to finishing-col collection?	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
					@Orientation= "Rotate0" | "Rotate90" | "Rotate180" | "Rotate270" (T)					
'jog-offset'	H	1.1 Jogging	8	N/A	DigitalPrinting DigitalPrintingParams/ Disjointing/ @OffsetDirection="Alternate"	Jog Offset (X)	**1.0 job-jog-offset** **x.x document-job-offset**	No	'jog-offset'	Yes
jog offset - Turn off	H	1.1 Jogging	8	N/A	DigitalPrintingParams/ Disjointing/ @OffsetDirection="None"	Jog Offset (X)	**1.0 job-jog-offset=NONE** **x.x document-jog-offset**		'none', else 'xxx' |= 'jog offset'	
'edge-stitch'	H			BindingIntent/ @BindingType="Side Sttich" (omit BindingSide)	Stitching StitchingParams/ @StitchType="Side" (omit ReferenceEdge) (S)				'edge-stitch'	
'edge-stitch-bottom'	H			BindingIntent/ @BindingType="Side Sttich" @BindingSide="Bottom"	Stitching StitchingParams/ @StitchType="Side" @ReferenceEdge="Bottom" (Dep in JDF/1.2) OR Stitching StitchingParams/ @StitchType="Side" ResourceLinkPool/ ComponentLink/ @Orientation="Rotate270" @Usage="Intermediate" (T)				'edge-stitch-bottom'	
'edge-stitch-left'	H			BindingIntent/ @BindingType="Side Sttich" @BindingSide="Left"	Stitching StitchingParams/ @StitchType="Side"				'edge-stitch-left'	
'edge-stitch-right'	H			BindingIntent/ @BindingType="Side Sttich" @BindingSide=Right	Stitching StitchingParams/ @StitchType="Side" @ReferenceEdge="Right" (Dep in JDF/1.2)				'edge-stitch-right'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
					OR Stitching StitchingParams/ @StitchType="Side" @Orientation="Rotate1 80" @Usage="Intermediate " (T)					
'edge-stitch-top'	H			BindingIntent/ @BindingType="Side Sttich" @BindingSide="Top"	Stitching StitchingParams/ @StitchType="Side" @ReferenceEdge="To p" (Dep in JDF/1.2) OR Stitching StitchingParams/ @StitchType="Side" ResourceLinkPool/ ComponentLink/ @Orientation="Rotate9 0" @Usage="Intermediate " (T)				'edge-stitch-top'	
'saddle-stitch'	H			BindingIntent/ @BindingType="Sad dleSttich" (omit BindingSide)	Stitching StitchingParams/ @StitchType="Saddle"				'saddle-stitch'	
'staple-bottom-left'	H			BindingIntent/ @BindingSide="Botto m" @BindingType="Corn erStitch" (T)	Stitching StitchingParams/ @StitchType="Side" @ReferenceEdge="Left " (Dep in JDF/1.2) OR Stitching StitchingParams/ @StitchType="Corner" ResourceLinkPool/ ComponentLink/ @Orientation="Rotate2				'staple-bottom-left'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
					70" @Usage="Intermediate" (T)					
'staple-bottom-right'	H			BindingIntent/ @BindingSide="Right" @BindingType=" CornerStitch" (T)	Stitching StitchingParams/ @StitchType="Corner" @ReferenceEdge="Right" (Dep in JDF/1.2) OR Stitching StitchingParams/ @StitchType="Corner" ResourceLinkPool/ ComponentLink/ @Orientation="Rotate180" @Usage="Intermediate" (T)				'staple-bottom-right'	
'staple-dual-bottom'	H			BindingIntent/ @BindingType="Side Sttich" @BindingSide="Bottom"	Stitching StitchingParams/ @NumberOfStitches=2 @StitchType="Side" @ReferenceEdge="Bottom" (Dep in JDF/1.2) OR Stitching StitchingParams/ @NumberOfStitches=2 @StitchType="Side" ResourceLinkPool/ ComponentLink/ @Orientation="Rotate270" @Usage="Intermediate" (T)				'staple-dual-bottom'	
'staple-dual-left'	H			BindingIntent/ @BindingType="Side Sttich" @BindingSide="Left"	Stitching StitchingParams/ @NumberOfStitches=2 @StitchType="Side" @ReferenceEdge="Left" (Dep in JDF/1.2)				'staple-dual-left'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
					OR Stitching StitchingParams/ @NumberOfStitches=2 @StitchType="Side" ResourceLinkPool/					
'staple-dual-right'	H			BindingIntent/ @BindingType="Side Sttich" @BindingSide="Right "	Stitching StitchingParams/ @NumberOfStitches=2 @StitchType="Side" @ReferenceEdge="Rig ht" (Dep in JDF/1.2) OR Stitching StitchingParams/ @NumberOfStitches=2 @StitchType="Side" ResourceLinkPool/ ComponentLink/ @Orientation="Rotate1 80" @Usage="Intermediate " (T)				'staple-dual-right'	
'staple-dual-top'	H			BindingIntent/ @BindingType="Side Sttich" @BindingSide="Top"	Stitching StitchingParams/ @NumberOfStitches=2 @StitchType="Side" @ReferenceEdge="To p" (Dep in JDF/1.2) OR Stitching StitchingParams/ @NumberOfStitches=2 @StitchType="Side" ResourceLinkPool/ ComponentLink/ @Orientation="Rotate9 0" @Usage="Intermediate				'staple-dual-top'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
					" (T)					
'staple-top-left'	H			BindingIntent/ @BindingSide="Left" @BindingType=" CornerStitch" (T)	Stitching StitchingParams/ @StitchType="Corner" @ReferenceEdge="Left " (Dep in JDF/1.2) OR Stitching StitchingParams/ @StitchType="Corner"				'staple-top-left'	
'staple-top-right'	H			BindingIntent/ @BindingSide="Top" @BindingType=" CornerStitch" (T)	Stitching StitchingParams/ @StitchType="Corner" @ReferenceEdge="To p" (Dep in JDF/1.2) OR Stitching StitchingParams/ @StitchType="Corner" ResourceLinkPool/ ComponentLink/ @Orientation="Rotate9 0" @Usage="Intermediate " (T)				'staple-top-right'	
'trim'	H	1.1 Trimming	8	N/A	Trimming TrimmingParams/ @TrimmingType="Syst emSpecified" (Dep. in JDF/1.2) In JDF/1.2, omit TrimmingType to get system specified (T)	Trimming (X)	**1.0 job-trimming x.x document-trimming x.x po-trimming 1.0 trimming-type=TRIM**	1.1	'trim'	Yes
trimming - Turn off	H	1.1 Trimming	8	N/A	Trimming TrimmingParams/ @NoOp="False"	Trimming (X)	**1.0 job-trimmingx.x document-trimming x.x po-trimming 1.0 trimming-**		'none', else 'xxx' |= 'trim'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
							type=NONE			
finishings-col (M)	L		8	Unknown				1.2	**finishings-col** (collection) [JT, DT, PO] Enables an end user to specify detailed finishing options not possible with the "finishings" attribute for the Output Document. [prod-print] §3.2	Yes
finishing-template			8		No	No			**finishing-template** (name(MAX)) A string specifying some particular finishing operation for the Output Document. [prod-print] §3.2.1	No
stitching			8	BindingIntent/ @BindingType="Side Sttich" @BindingSide	Stitching StitchingParams/ @ReferenceEdge (Dep in JDF/1.2) @Offset @StitchPositions (NumberList) [NumberOfStitches=-1]	Stitching (X)	**@ job-stitching**		**stitching** (collection) Provides detailed stitching parameters. [prod-print] §3.2.2	
stitching-reference-edge			8	@BindingSide	Stitching StitchingParams/ @ReferenceEdge (Dep in JDF/1.2) OR Stitching StitchingParams/ ComponentLink/ [@Usage="Intermediate"] @Orientation (T)	Yes (X)	**1.0 stitching-reference-edge**		**stitching-reference-edge** (type2 keyword) Specifies the stitching reference edge of the output media. [prod-print] §3.2.2.1	
'bottom'				@BindingSide="Bottom"	@ReferenceEdge="Bottom" (Dep in JDF/1.2) OR Stitching StitchingParams/ ComponentLink/ [@Usage="Intermediate"] @Orientation="Rotate270" (T)	Yes (X)			'bottom'	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
'top'				@BindingSide="Top"	@ReferenceEdge="Top" (Dep in JDF/1.2) OR Stitching StitchingParams/ ComponentLink/ [@Usage="Intermediate"] @Orientation="Rotate90" (T)	Yes (X)			'top'	
'left'				@BindingSide="Left"	@ReferenceEdge="Left" (Dep in JDF/1.2) OR Stitching StitchingParams/ (T)	Yes (X)			'left'	
'right'				@BindingSide="Right"	@ReferenceEdge="Right" (Dep in JDF/1.2) OR Stitching StitchingParams/ ComponentLink/ [@Usage="Intermediate"] @Orientation="Rotate180" (T)	Yes (X)			'right'	
stitching-offset			8	BindingIntent/ @BindingType="SideSttich" JDF/ StitchingParams/ @Offset (P)	@Offset	No (X)	**x.x stitching-offset**		**stitching-offset** (integer (0:MAX)) The perpendicular distance from the reference edge to the stitching axis in hundredths of a millimeter. [prod-print] §3.2.2.2	
stitching-locations			8	BindingIntent/	@StitchPositions	No (X)	**x.x stitching-**		**stitching-locations** (1setOf	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				@BindingType="Side Sttich" JDF/ StitchingParams/ @StitchPositions (NumberList) [NumberOfStitches=-1] (P)	(NumberList) [NumberOfStitches=-1]		**positions**		integer(0:MAX)) The distance along the stitching axis where a stitch will be placed in hundredths of a millimeter. [prod-print] §3.2.2.3	
Stitching - complex	L		8	BindingIntent/ @BindingType="Side Sttich" JDF/ StitchingParams/ @Angle @StitchPositions (NumberList) [NumberOfStitches=-1] (P)	Stitching StitchingParams/ @Angle @StitchPositions	Stapling & Stitching (X)	**1.0 stitching-angle x.x stitching-positions**		IPP has stitching-reference-edge, stitching-offset, and stitching-locations, but not angle. See "finishings-col".	
font-name-requested	N		36	N/A	Interpreting, FontPolicy/ @PreferredFont	No (X)	**x.x**		**font-name-requested** (name(MAX)) [JT, DT, PO] Specifies the font name if the document data is in a format that does not have inherent font information (e.g., 'text/plain'), otherwise, this attribute is ignored. [prod-print2] §5.2	
font-size-requested	N		36	N/A	N/A	No (X)	**x.x**		**font-size-requested** (integer (1:MAX)) [JT, DT, PO] Specifies the font size in points (1/72 of an inch) if the document data is in a format that does not have inherent font information (e.g., 'text/plain'), otherwise, this attribute is ignored. [prod-print2] §5.3	
force-front-side note: This is only for front side, need back side as well.	H	EFI Media – Chapter Starts	7	RunList/ @Pages InsertSheet/ @SheetType="FillSheet"	LayoutPreparation RunList/ @Pages InsertSheet/ @SheetType="FillShee	Force Page (X)	**1.0 job-force-pages x.x document-force-pages**	1.2	**force-front-side** (1setOf integer(1:MAX)) [JT[10], DT, PO] Forces the specified pages to be printed on the front side of a sheet of media. The pages of the output	Yes

[10] The effect of the IPP "force-front-side" attribute when supplied at the job level of a multi-document job depends on the value of the "multiple-document-handling" Job Template attribute. For the 'single-document' and 'single-document-new-sheet' values, the pages are numbered as a single set from 1 to n for the job as a whole. For the 'separate-documents-collated-copies' and 'separate-document-uncollated-copies' values, the pages are numbered from 1 to n for each document separately.

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				@SheetUsagee="Fill ForceFront" (S)	t" @SheetUsage="FillForceFront" (S)				document start at 1. [prod-print] §3.3	
halftone-{graphics | images | text}	H	1.1 Screen EFI Image Quality – Screening	6C	(T) We need to provide a means for the customer to specify the halftone "look" – often the halftone used is a visible attribute of the finished piece. Define a new Intent Resource so that a span of values can be specified: ScreeningIntent/ @ScreeningType @FrequencySelection OR @DotSize (T)	Screening ScreeningParams/ ScreenSelector/ @DotSize @Frequency @ScreeningType @SourceObjects @SpotFunction OR Rendering RenderingParams/ ObjectResolution/ @Resolution @SourceObjects PreviewGeneration PreviewGenerationParams/ @Resolution Preflight PSToPDFConversionParams/ @InitialResolution	Screening (X) Family			**halftone-{graphics | images | text}** (type2 keyword | name(MAX)) [JT, DT, PO] Specify the halftone screens to be used by the Printer to render graphics, image, and text objects, respectively, within color or black and white documents. Screens are implementation-specific with different line frequencies, angles, and spot functions implied by each keyword value. Numeric keyword values are *approximate*, i.e., nominal values. [color&img] §4.3, 4.4, 4.5. IPP ISSUE: What's the difference between xxx-frequency-dot and xxx-frequency-line? Its is FM versus AM, respectively?	
				NoOp="True"	NoOp="True"				none	
				ScreeningType = FM FrequencySelection= **LowestFrequency (T)**	ScreeningType = AM **SpotFunction = SimpleDot | Round | CosineDot | Ellipse**				low-frequency-dot	
				ScreeningType = FM FrequencySelection= **MiddleFrequency (T)**	ScreeningType = AM **SpotFunction = SimpleDot | Round | CosineDot | Ellipse**				mid-frequency-dot	
				ScreeningType = FM FrequencySelection= **HighestFrequency (T)**	ScreeningType = AM **SpotFunction = SimpleDot | Round | CosineDot | Ellipse**				high-frequency-dot	
				N/A	N/A				highest-frequency-dot	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				ScreeningType = AM FrequencySelection= **LowestFrequency** (T)	ScreeningType = AM **LowestFrequency SpotFunction=Line**				low-frequency-line	
				ScreeningType = AM FrequencySelection= **MiddleFrequency** (T)	ScreeningType = AM **MiddleFrequency SpotFunction=Line**				mid-frequency-line	
				N/A	**N/A**				high-frequency-line	
				ScreeningType = AM FrequencySelection= **HighestFrequency** (T)	ScreeningType = AM **HighestFrequency** SpotFunction=Line				highest-frequency-line	
				ScreeningType = FM DotSize= 138~162	ScreeningType = FM DotSize = 2540/150 = 16.9				150-dpi	
				ScreeningType = FM DotSize= 163~187	ScreeningType = FM DotSize = 2540/175 = 14.5				175-dpi	
				ScreeningType = FM DotSize= 188~212	ScreeningType = FM DotSize = 2540/200 = 16.9				200-dpi	
				ScreeningType = AM Frequency = *150~249*	ScreeningType = AM Frequency = *200*				200-lpi	
				ScreeningType = AM Frequency = *250~349*	ScreeningType = AM Frequency = *300*				300-lpi	
				ScreeningType = AM Frequency = *550~649*	ScreeningType = AM Frequency = *600*				600-lpi	
				ScreeningType = FM DotSize= nnn~nnn	ScreeningType = FM DotSize = nnn				Other n-dpi values are possible.	
				ScreeningType = AM Frequency= *nnn~nnn*	ScreeningType = AM Frequency = *nnn*				Other n-n-lpi values are possible.	
highlight-colorant	M		C	ColorIntent/ ColorPool/ Color/ @ColorName (S) Add new values to Appendix A.2.8 See also highlight-map-color	DigitalPrinting Ink/ @Family @InkName or Ink/ @ColorName and ColorPool/ Color/ @ColorName (S) Add new values to				**highlight-colorant** (type3 keyword | name(MAX)) [JT, DT, PO] Specifies the color of the toner that the Printer MUST use as the highlight color when printing the document in highlight color mode. [color&img] §3.8 IPP ISSUE: Add JDF values to IPP.	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
					Appendix A.2.8					
				Values of Color/ @ColorName: NoColor	Values of Color/ @ColorName: NoColor				none	
				Black	Black				black	
				Blue	Blue				blue	
				Brown	Brown				brown	
				Buff	Buff				**buff**	
				Cardinal	Cardinal				cardinal	
				Cyan	Cyan				cyan	
				Gold	Gold				**gold**	
				Goldenrod	Goldenrod				**goldenrod**	
				Gray	Gray				gray	
				Green	Green				green	
				Ivory	Ivory				ivory	
				Magenta	Magenta				magenta	
				MultiColor New in JDF 1.1	MultiColor New in JDF 1.1				multicolor	
				Mustard New in JDF 1.1	Mustard New in JDF 1.1				mustard	
				Orange	Orange				orange	
				N/A ??	N/A ??				other	
				Pink	Pink				pink	
				Red	Red				red	
				Royal	Royal				royal	
				Ruby	Ruby				ruby	
				Silver	Silver				silver	
				Turquoise	Turquoise				turquoise	
				Violet	Violet				violet	
				White	White				white	
				Yellow	Yellow				yellow	
highlight-colorant-mismatch	L		C	Unknown	Unknown				**highlight-colorant-mismatch** (type3 keyword | name(MAX)) [JT, DT, PO] Specifies the action to be taken by the Printer if the desired highlight colorant is not currently loaded on the printer. Values are: abort, use-ready, hold, stop. [color&img] §3.9	
highlight-map	L		C	N/A	ColorSpaceConversion ColorSpaceConversion Params/ ColorSpaceConversion Op/				**highlight-map** (type3 keyword | name(MAX)) [JT, DT, PO] Specifies the algorithm that the Printer MUST use for mapping colors defined in the full color space to a color in the	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
					@HighlightMap (N) JDF ISSUE: If we get to Low Priority items, need to define new attribute providing a selection of highlight mapping algorithms.				highlight color space. [color&img] §3.10	
'pictorial'									'pictorial'	
'presentation'									'presentation'	
'object-based'									'object-based'	
'color-to-highlight'									'color-to-highlight'	
'exact-color'									'exact-color'	
'color-tables'									'color-tables'	
highlight-map-color	M		C	(P) We need to allow the customer to select which color is to be mapped to the highlight colorant. ColorIntent/ JDF/ ColorSpaceConversion ColorantControl/ ColorantAlias/ @ReplacementColorantName (string) SeparationSpec/* @Name (string) JDF ISSUE: What about the new *CMYKValue attribute added to ColorSpaceSubstitute which has the CMYKColor data type?*	ColorSpaceConversion ColorantControl/ ColorantAlias/ @ReplacementColorantName (string) @SeparationSpec @Name (This choice is the preferred one and should be the one for our ICS) OR ColorantControl/ ColorSpaceSubstitute/ @ PDLResourceAlias, @SeparationSpec/+ @Name (string) JDF ISSUE: What about the new *CMYKValue* attribute added to ColorSpaceSubstitute which has the *CMYKColor* data type?				**highlight-map-color** (type3 keyword	name(MAX)) [JT, DT, PO] Specifies the color in the source document that is to be mapped by the Printer to the highlight colorant (see "highlight-colorant" attribute) when printing the document in highlight color mode. This value is used as an input parameter to the highlight mapping algorithm specified by the "highlight-map" attribute. Values: see "colorant-value" [color&img] §3.11	
imposition-template	L		7	LayoutIntent/Layout/ @Name	DigitalPrinting, Imposition	No ? (X)	**Never**	1.2	**imposition-template** (type3 keyword	name(MAX)) [JT, DT, PO]	Yes

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
					Layout/ @Name				Specifies imposition method for laying out finished page images onto the surface of output media. Keywords: none, signature [prod-print] §3.4	
impressions-completed-current-copy (S) (M)	N			N/A	N/A	No	**Never**	No	**impressions-completed-current-copy** (integer(0:MAX)) [JS, DS] The number of impressions completed for the current copy of (1) the current Document of this Job or (2) this Document. The Printer sets this value to 0 at the beginning of each Document copy and each Document. The current Document is identified by the value of the "sheet-completed-document-number" Description attribute. The current copy is identified by the value of the "sheet-completed-copy-number" Description attribute. [job-prog] §4.4	No
insert-sheet	H	EFI Media – Inserts	58		LayoutPreparation LayoutPreparationParams/ <mark>Note: It has been proposed for JDF 1.2 to move InsertSheet out of RunList.</mark>	Insert Sheet (X)	**1.0 job-insert-sheets** **x.x document insert-sheets**	1.2	**insert-sheet** (1setOf collection) [JT[11], DT, PO] Specifies how Insert Sheets are to be inserted into the sequence of media sheets that are produced for each copy of the documents. [prod-print] §3.5	Yes
insert-after-page-number (Mn)	H			RunList/ @Pages InsertSheet/ @SheetType="Insert Sheet" | "SeparatorSheet" @SheetUsage (S)	RunList/ @Pages=*after page number* InsertSheet/ @SheetType="InsertSheet" | "SeparatorSheet" @SheetUsage="Trailer" (S)	Yes (X)	**1.0 insert-sheet-pages** **1.0 insert-sheet-position**		**insert-after-page-number** (integer(0:MAX)) Specifies the input page after which the Insert Sheet will be placed. Pages are numbered starting at 1. A 0 value means in front of the first page. No document content is printed on the sheet. [prod-print] §3.5.1	
insert-count	L			RunList/ @PageCopies (S)	RunList/ @PageCopies (S)	Yes (X)	**1.0 insert-sheet-count**		**insert-count** (integer(0:MAX)) Specifies the number of Insert Sheet to insert. [prod-print] §3.5.2	

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[11] The effect of the IPP "insert-sheet" attributes when supplied at the job level of a multi-document job depends on the value of the "multiple-document-handling" Job Template attribute. For the 'single-document' and 'single-document-new-sheet' values, the pages are numbered as a single set from 1 to n for the job as a whole. For the 'separate-documents-collated-copies' and 'separate-document-uncollated-copies' values, the pages are numbered from 1 to n for each document separately.

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
media OR:	H			MediaIntent/ @CatalogID	DigitalPrinting DigitalPrintingParams/ Media/ @CatalogID OR RunList/ InsertSheet/ Media/ Location/ @LocationName=*input tray name*	No (X)	**1.0 insert-sheet-media**		**media** (type3 keyword | name(MAX)) The descriptive name or the name of the input tray containing the media to use for the insert sheet. See "media" on page 56. [prod-print] §3.5.3	See IPP "media" attribute on page 56.
media-col	H			RunList/ InsertSheet/ Media (S)	RunList/ InsertSheet/ Media (S)	Yes (X)	**1.0 insert-sheet-media**		**media-col** (collection) **Characteristics of the media to use for the insert sheet.** See "media-col" on page 58. [prod-print] §3.5.3	See IPP "media-col" attribute on page 58.
put document content onto the insert sheet					RunList/ InsertSheet/ @SheetFormat	Yes (X)	**1.0 insert-sheet-content**	No	"overrides" {pages=n:n; media=*media name*	
ipp-attribute-fidelity note: Use with "job-mandatory-attributes" attribute	H[12]		10	@SettingsPolicy	@SettingsPolicy	Settings Policy (X)	**see jt-manatory-attributes**	1.1	**ipp-attribute-fidelity** (boolean) [JD] Allows a user to control whether or not the Printer MUST honor *all* supplied Job Template and Document Template attributes in the Job Creation operation. For a 'true' value the Printer MUST reject the job submission if any of the supplied attribute values are unsupported. For a 'false' value the Printer MUST accept the job submission and do best effort. Default = 'false' [RFC2911] §15.1 See also "job-mandatory-attributes" attribute.	IDPrintingParams/ @IDPAttributeFidelity
Job ticket author name and author version	L		10	N/A	AuditPool/ Created/ @AgentName/ @AgentVersion	Job Ticket Created By (X)	**x.x jt-author-name** **x.x jt-author-version**	No	No IPP attribute	No
job-account-id	H	EFI General/ Account Info -	1	CustomerInfo/ @BillingCode (S)	CustomerInfo/ @BillingCode (S)	Billing Code (X)	**1.0 job-billing-code**	1.2	**job-account-id** (name(MAX)) [JT[13]] Account associated with the job. [prod-print] §3.6	Yes

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[12] Consider only supporting SettingsPolicy at the JDF Node level and not at the Resource level (which is contrary to the JDF 1.1 spec)

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
		Account/Project Information EFI Billing Info							Note: Not sure if this is the same as BillingCode	
job-accounting-sheets	L		1 5 8			No (X)	**x.x**	1.2	**job-accounting-sheets** (collection) [JT] Specifies the accounting sheet for this Job. [prod-print] §3.8	
job-accounting-sheets-type	L			LayoutIntent/ Layout/ InsertSheet [@SheetType="AccountingSheet"] [@SheetUsage="Trailer"]	LayoutPreparation LayoutPreparationParams/ InsertSheet [@SheetType="AccountingSheet"] [@SheetUsage="Trailer"]	No (X)			**job-accounting-sheets-type** (type3 keyword | name(MAX)) Specifies the accounting sheet format for a job. (keywords: none, standard) [prod-print] §3.8.1	Yes
media OR:	L			MediaIntent/ @CatalogID	DigitalPrinting DigitalPrintingParams/ Media/ @CatalogID OR RunList/ InsertSheet/ Media/ Location/ @LocationName=*input tray name*	No			**media** (type3 keyword | name(MAX)) The descriptive name or the name of the input tray containing the media to use for the job accounting sheet. See "media" on page 56. [prod-print] §3.5.3	See IPP "media" attribute on page 56.
media-col	L			MediaIntent/	Media/	No (X)			**media-col** (collection) **Characteristics of the media to use for the cover.** See "media-col" on page 58. [prod-print] §3.5.3	See IPP "media-col" attribute on page 58.
job-accounting-output-bin	L					No (X)			**job-accounting-output-bin** (type3 keyword | name(MAX)) Specifies the output bin where the accounting sheet is to be placed. Values: See "output-bin" attribute. [prod-print] §3.8.3	No
job-accounting-user-id	L		1	CustomerInfo/ @CustomerID	CustomerInfo/ @CustomerID	No (X)	**x.x**	1.2	**job-accounting-user-id** (name(MAX)) [JT[14]] Specifies the User ID associated with the "job-account-id". [prod-print] §3.7	Yes

[13] The "job-account-id" is termed a Job Description attribute instead of a Job Processing attribute by the PWG Semantic Model [pwg-sm].
[14] The "job-accounting-user-id" is termed a Job Description attribute, instead of a Job Processing attribute, by the PWG Semantic Model [pwg-sm].

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
job-client-id\n\nnote: This attribute does not currently exist in IPP.	L		10	JobID	JDF/ @JobID	No (X)	**x.x job-client-id**		No IPP attribute. but "job-client-id" does exist in the PWG Job Monitoring MIB - V1.0 (RFC 2707). IPP ISSUE: Add "job-client-id" (name(MAX)) [JD] to IPP?	
job-collation-type (S) [15]	N			N/A	N/A	No	**Never**	No	**job-collation-type** (type2 enum) [JS, -] Identifies the collation type of this Job. The Printer sets the value from the submitted "sheet-collate" and "multiple-document-handling" Job Template attributes. (Keywords: other, unknown, uncollated-sheets, uncollated-documents, collated-documents). [job-prog] §4.1	No
Job Comment or description of job	H		10	Comment/ [@Name="JobDescription"] (T) (S) [@Name="Description" for JDF/1.1	Comment/ [@Name="JobDescription"] (T) (S) [@Name="Description" for JDF/1.1	Comment/ Description of Job (X)	**@ job-comment**		No IPP attribute. Propose "job-comment" text(MAX) Operation and Job Description attribute to add to IPP.	
job-detailed-status-messages (S)	N			N/A	AuditPool/ Notification/ @Class="Event" @Type="Event" (T) @Comment=*message*	No	**Never**	1.1	**[job-]detailed-status-message** (1setOf text (MAX)) [JS, DS] Specifies additional detailed and technical information about this Job/Document. Intended for use by the system administrator or other experienced technical persons and so is not localized by the Printer. (example: "PostScript error: stack overflow") [RFC2911] §4.3.10	No
job-document-access-errors (S)	N			N/A	AuditPool/ Notification/ @Class="Error" @Type="Event" (T) @Comment=*message*	No	**Never**	1.1	**[job-]document-access-errors** (1setOf text(MAX)) [JS, DS] Information about each Document access error for this Job/Document encountered by the Printer. (example: "(404) http://www.company.com/pub/fileToPrint.pdf") [RFC2911] §4.3.11	No
job-error-sheet	L		158	LayoutIntent/ Layout/ InsertSheet	LayoutPreparation LayoutPreparationParams/	No (X)	**x.x**	1.2	**job-error-sheet** (collection) [JT] Specifies the error sheet for a job. [prod-print] §3.9	Yes

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[15] The IPP "job-collation-type" Job Description attribute has values of 'none', which the Printer sets from the two Job Template attributes: "multiple-document-handling" and "sheet-collate". For the FSG Job Ticket API, the "job-collation-type" should be both the input and the Description attribute, possibly with some additional values.

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				@SheetType @SheetUsage Sheet/ Media/	InsertSheet @SheetType @SheetUsage Sheet/ Media/					
job-error-sheet-type	L					No (X)			**job-error-sheet-type** (type3 keyword	name(MAX)) Specifies the error sheet format for a job. [prod-print] §3.9.1	
				omit	NoOp="True"				'none'	
				@SheetType="ErrorSheet"]	@SheetType="ErrorSheet"				'standard'	
job-error-sheet-when	L			@SheetUsage	@SheetUsage	No (X)			**job-error-sheet-when** (type2 keyword) Specifies when the accounting sheet is produced for a job. [prod-print] §3.9.2	
'on-error'				@SheetUsage="OnError"	@SheetUsage="OnError"				'on-error'	
'always'				@SheetUsage="Status"	@SheetUsage="Status"				'always'	
media OR:	L			Media/ @CatalogID	Media/ @CatalogID OR Media/ Location/ @LocationName=*input tray name*	No (X)			**media** (type3 keyword	name(MAX)) The descriptive name or the name of the input tray containing the media to use for the error sheet. See "media" on page 56. [prod-print] §3.5.3	See IPP "media" attribute on page 56.
media-col	L			Mediia/	Media/	No (X)			**media-col** (collection) **Characteristics of the media to use for the cover.** See "media-col" on page 58. [prod-print] §3.5.3	See IPP "media-col" attribute on page 58.
job-hold-until	H		10			HoldJob (X)	**1.0 job-hold**	1.1	**job-hold-until** (type3 keyword	name(MAX)) [JT] Specifies the named time period during which the Job must become a candidate for printing. [RFC2911] §4.2.2	Yes
indefinite - Turn off	H			JDF/ {@Activation="Active"]	JDF/ {@Activation="Active"]	Yes (X)			'no-hold'	
'indefinite'	H			JDF/ [@Activation="Held"]	JDF/ [@Activation="Held"]	Yes (X)			'indefinite'	
	L			JDF/	JDF/	No (X)			Values: day-time, evening, night,	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				NodeInfo/ @FirstStart=*date-time corresponding to the value*	NodeInfo/ @FirstStart=*date-time corresponding to the value*				weekend, second-shift, third-shift	
job-hold-until-time	L		10	JDF/ NodeInfo/ @FirstStart (S)	JDF/ NodeInfo/ @FirstStart (S)	No (X)	**x.x**	1.2?	**job-hold-until-time** (dateTime) [JT] Specifies the date and time after which the Job must become a candidate for printing. (example: Fri, 03 May 2002 08:49:37 GMT) [prod-print2] §5.4	
job-id (S)	L			AuditPool/ QueueEntryID	AuditPool/ QueueEntryID		**x.x job-id**	1.1	**job-id** (integer(1:MAX)) [JS, -[16]] The Printer generates and sets this attribute to the ID of this Job, which is unique for this Printer. [RFC2911] §4.3.2	<any JDF node>/ JobPhase/ @QueueEntryID
job-impressions	L		310	LayoutIntent/ @Pages (clarified in JDF/1.2 to be Surfaces)	Unknown	No ? (X)	**Never**	1.1	**[job-]impressions** (integer(0:MAX) [JD, DT] The total size of this Job/Document in number of impressions. [RFC2911] §4.3.17.2, [doc-obj] §6	TBD
job-impressions-completed (S)	N			N/A	Unknown	No	**Never**	No	**[job-]impressions-completed** (integer(0:MAX)) [JS, DS] The number of impressions completed for this Job/Document so far. [RFC2911] §4.3.18.2	No
job-k-octets	N			Unknown	Unknown	No	**Never**	1.1	**[job-]k-octets** (integer(0:MAX) [JD, DT] The total size of this Job/Document in integral units of 1024 octets. [RFC2911] §4.3.17.1, [doc-obj] §6	TBD
job-k-octets-processed (S)	N			N/A	Unknown	No	**Never**	1.1	**[job-]k-octets-processed** (integer(0:MAX)) [JS, DS] The total number of octets processed in integral units of 1024 octets so far for this Job/Document. [RFC2911] §4.3.18.1	No
job-mandatory-attributes	H		10	@SettingsPolicy	@SettingsPolicy Note: To conform to JDF spec, must support SettingsPolicy down to	Settings Policy (X)	**1.0 jt-mandatory-attributes** [17]	No	**job-mandatory-attributes** (1setOf type2 keyword) [JD] Allows a user to list which Job Template and Document Template attributes the Printer MUST honor. The Printer	No

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[16] The IPP "job-id" Job Description attribute corresponds to the (new) "document-number" Document Description attribute.

[17] Values of jt-madatory-attributes supported for 1.0 will be None and All; x.x for the values that are specific attribute names.

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
					Resource level.				MUST reject the job submission if *any* of the listed attributes contain values that the Printer does not support. All of the remaining supplied attributes are best effort. This attribute is ignored if "attribute-fidelity" is supplied with a 'true' value. (See [RFC2911] §15.1) (Keywords: none and any Job and Document Template attribute names. Member attributes of collection attributes are named as *attr-name.member-name*. For example, 'job-sheets-col.media') NOTE: New attribute to align fidelity with FSG and PSI work. [doc-obj] §6.2.2	
job-media-sheets	L		310		Unknown	No ? (X)	**x.x**	1.1	**[job-]media-sheets** (integer(0:MAX) [JD, DT] The total size of this Job/Document in media sheets . [RFC2911] §4.3.17.3, [doc-obj] §6	TBD
job-media-sheets-completed (S)	N			N/A	N/A	No	**x.x**	1.1	**[job-]media-sheets-completed** (integer(0:MAX)) [JS, DS] The media-sheets completed marking and stacking for this Job/Document so far. [RFC2911] §4.3.18.3	No
job-message-from-operator (S)	N			N/A	N/A	No	**Never**	1.1	**job-message-from-operator** (text(MAX)) [JD] Message to the end user indicating the reasons for any management action taken on a this job. (Example: "Job canceled due to length", "Pick job up in mailbox") Note: The natural language is not localized by any recipient, since this message is generated by a human. [RFC2911] §4.3.16	No
job-message-to-operator	H	EFI General/ Account Info – Instructions	10	JDF/ Comment/ [@Name="OperatorText"] (T)	JDF/ Comment/ [@Name="OperatorText"] (T)	Message To Operator (X)	**1.0 job-message-to-operator**	1.2	**job-message-to-operator** (text(MAX)) [JT[18]] Message from the end user to indicate something about the processing of the job. Note: The natural language is not localized by any recipient, since this message is generated by a human. (example:	Yes

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[18] The "job-message-to-operator" is termed a Job Description attribute, instead of a Job Processing attribute, by the PWG Semantic Model [pwg-sm].

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
									"Call 555-1234 before running this job") [prod-print] §3.10	
job-more-info (S)	N			N/A	N/A	No	**Never**	1.1	**[job-]more-info** (uri) [JS, DS] URI used to obtain information intended for end user consumption about this specific Job/Document. (example: "http://www.company.com/printer/embededdjobpage") [RFC2911] §4.3.4	No
job-name	H		1 0	CustomerInfo/ @CustomerJobName (S) (a common element for any node)	CustomerInfo/ @CustomerJobName (S) (a common element for any node)	Job Name (X)	**@ job-name**	1.1	**job-name** (name(MAX)) [JD] The Printer sets this to the client-supplied end-user friendly name for the Job, else the Printer must generate a name from other information. (example: "license agreement memo") [RFC2911] §4.3.5	CustomerInfo/ @CustomerJobNa me (a common element for any node)
job-originating-user-name (S)	N			N/A	N/A	No	**Never**	1.1	**job-originating-user-name** (name(MAX)) [JS, -] The Printer sets this attribute to the most authenticated printable name that it can obtain (example: "John Doe", \authDomain\John Doe") [RFC2911] §4.3.6	No
job-password	L		1 0	Unknown	Unknown	No (X)	**x.x**		**job-password** (octetString (255)) [JD] Contains a password supplied by the client encrypted according to method specified by the client in the "job-password-encryption" attribute. The password provides a mechanism for the user to perform a Secure Print. The Printer places the Job in the 'pending-held' state with the 'job-password-wait' value in the Job's "job-state-reasons" attribute. Then the user enters the password locally at the Printer. If the password matches, the Printer removes the 'job-password-wait' value, moves the Job to the 'pending' state, and schedules the Job to run next. [prod-print2] §4.1	
job-password-encryption	L		1 0	Unknown	Unknown	No (X)	**x.x**		**job-password-encryption** (type3 keyword	name(MAX)) [JD] Specifies the type of encryption that the client is used for the supplied	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
									value of the JobPassword attribute. (Keywords: none, md2, md4, md5, sha) [prod-print2] §4.2	
job-phone-number	H		1	CustomerInfo/ Contact/ [@ContactTypes="Customer" ComChannel/ @ChannelType="Phone" @Locator=*phone number* (S)	CustomerInfo/ Contact/ [@ContactTypes="Customer" ComChannel/ @ChannelType="Phone" @Locator=*phone number* (S)	Contact Information (X)	**1.0 job-contact-info** **1.0 contact-info-contact-uri**		**job-phone-number** (text(127)) [JT[19]] Contains the contact telephone number for the job. [prod-print2] §5.5	CustomerInfo/ Contact
job-printer-make-and-model (S) note: Works with job-save-disposition	N			N/A	N/A	No	**x.x**	1.2 ?	**job-printer-make-and-model** (text(127)) [JS, -] Identifies the make and model of the output device which saved this Job according to the "job-save-disposition" Job Template attribute. [prod-print2] §6.1	No
job-printer-uptime (S)	N			N/A	N/A	No	**Never**	1.1 ?	**[job-]printer-up-time** (integer (1:MAX)) [JS, DS] The amount of time (in seconds) that the Printer has been up and running. These Job/Document State attributes are an alias for the "printer-up-time" Printer State attribute for use by the client in a Job/Document query response to compare with the TimeAtCreation, TimeAtProcessing, and TimeAtCompleted State attributes. [RFC2911] §4.3.14.4	No
job-printer-uri (S)	N			N/A	N/A	No	**x.x**	1.1	**job-printer-uri** (uri) [JS] The URI of the (logical) Printer (or queue) to which the Job was submitted. [RFC2911] §4.3.3	No
job-priority	M		1 0	NodeInfo/ @JobPriority	NodeInfo/ @JobPriority	Job Priority (X)	**1.0 job-priority**	1.1	**job-priority** (integer(1:100) [JT] Priority for scheduling the Job. A higher value specifies a higher priority. [RFC2911] §4.2.1	Yes
job-recipient-name	L		1 0	LayoutIntent/ Layout/	LayoutPreparationParams /	No (X)	**x.x**	??	**job-recipient-name** (name(MAX)) [JT[20]] Contains the name of the	Yes

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[19] The "job-phone-number" attribute is termed a Job Description attribute, instead of a Job Processing attribute, by the PWG Semantic Model [pwg-sm].
[20] The "job-recipient-name" attribute is termed a Job Description attribute, instead of a Job Processing attribute, by the PWG Semantic Model [pwg-sm].

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				InsertSheet/ Sheet/ Surface/ MarkObject/ JobField/ @ShowList="JobRecipientName"	InsertSheet/ Sheet/ Surface/ MarkObject/ JobField/ @ShowList="JobRecipientName"				person that is to receive the output of the job and is commonly printed on the job sheet. It may also be used to reference a data base containing delivery instructions for the recipient. [prod-print2] §5.6	
job-save-disposition	L		10	Unknown	DigitalPrinting DigitalPrintingParams/ @DeliveryMethod (N) JDF ISSUE or ICS ISSUE: Need to find a JDF/1.1a mapping or JDF/1.2 addition	No (X)	x.x		**job-save-disposition** (collection) [JT] Specifies that the Printer is to save the job as a file that can be re-printed on demand anytime in the future using the Print-URI operation (see [RFC2911] section 3.2.2). [prod-print2] §5.7	
save-disposition-type									**save-disposition** (type3 keyword) Specifies whether the Printer MUST print and/or save the job. [prod-print2] §5.7.1.1	
'none'									'none'	
'save-only'									'save-only'	
'print-save'									'print-save'	
save-info									**save-info** (1setOf collection) Contains sets of attributes that each tell the Printer how to create each copy of the saved job. [prod-print2] §5.7.1.2	
save-location									**save-location** (uri) Specifies the path to the directory as a URI where the Printer saves the Document Data and other Job information. Example: 'ftp://printhost.printco.com/var/spool/jobdir/' or 'file:///job-repository/jobdir/' [prod-print2] §5.7.1.2.3.1	
save-name									**save-name** (name(MAX)) Specifies the name of the saved job in the directory specified by the "save-location" member attribute. The value may be a relative path. Example: if "save-location" is 'ftp://printhost.printco.com/var/spool/jobdir/' or 'ftp://printhost.printco.com/var/spool/jobdir/' and "save-name" is 'c/d', the resulting saved job URI is	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
									'ftp://printhost.printco.com/var/spool/jobdir/c/d'. [prod-print2] §5.7.1.2.3.2	
save-document-format									**save-document-format** (mimeMediaType) Indicates the document format in which the Printer is to save the job content (Document Data). Values are any document format that the Printer supports, except 'application/octet-stream'. See DocumentFormat Document Description attribute. [prod-print2] §5.7.1.2.3.3	
job-sheet-message	H		10	LayoutIntent/ JDF/ LayoutPreparationParams/ InsertSheet/ Sheet/ Surface/ MarkObject/ JobField/ [@ShowList="UserText"]/ @UserText	LayoutPreparation LayoutPreparationParams/ InsertSheet/ Sheet/ Surface/ MarkObject/ JobField/ [@ShowList="UserText"]/ @UserText	Separator Sheet (X)	**1.0 job-separator-sheets** **1.0 separator-sheet-message**	1.2	**job-sheet-message** (text(MAX)) [JT] Conveys a message that the Printer prints on the job sheet. [prod-print] §3.12	Yes
job-sheets note: Use job-sheets-col	N		8	see job-sheet-col	see job-sheet-col	No	**Never**	1.1	**job-sheets** (type3 keyword | name(MAX)) [JT] Specifies which job start/end sheet(s), will be printed with a job. (Keywords: none, standard, job-start-sheet, job-end-sheet, job-both-sheets, first-print-stream-page) [RFC2911] §4.2.3, [prod-print] §6.2	Yes
job-sheets-col	H		58			Start, Separator/ Slip, End Sheets (X)	**1.0 job-separator-sheets**	1.2	**job-sheets-col** (collection) [JT] Allows the client to specify the media for the JobSheet. [prod-print] §3.11	Yes
job-sheets	H			LayoutIntent/ JDF/ LayoutPreprarationParams/ InsertSheet/ @SheetType @SheetUsage	LayoutPreparation LayoutPreparationParams/ InsertSheet/ @SheetType @SheetUsage (S)	Yes (X)	**1.0 separator-sheet-type**		**job-sheets** (type3 keyword | name(MAX)) Specifies which job start/end sheet(s), will be printed with a job. [prod-print] §3.11.1	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				(S) (P)						
none	H			omit all from ticket	@NoOp="true" @SheetType="JobSheet" @SheetUsage="Header"	Yes (X)			**'none'**	
standard	H			@SheetType="JobSheet" @SheetUsage="Header"	@SheetType="JobSheet" @SheetUsage="Header"	Yes (X)			**'standard'**	
media OR:	H			MediaIntent/ @CatalogID	DigitalPrinting DigitalPrintingParams/ Media/ @CatalogID OR InsertSheet/ Media/ Location/ @LocationName=*input tray name*	No (X)	**1.0 separator-sheet-media**		**media** (type3 keyword | name(MAX)) The descriptive name or the name of the input tray containing the media to use for the job sheet. See "media" on page 56. [prod-print] §3.5.3	See IPP "media" attribute on page 56.
media-col	H			MediaIntent/	DigitalPrinting DigitalPrintingParams/ Media	Yes (X)	**1.0 separator-sheet-media**		**media-col** (collection) **Characteristics of the media to use for the job sheet.** See "media-col" on page 58. [prod-print] §3.5.3	See IPP "media-col" attribute on page 58.
job-state (S)	L			N/A	**AuditPool/ ProcessRun/ @EndStatus**	No	**x.x**	1.1	**job-state** (type1 enum) [JS, -[21]] The current state of this Job. See also JobStateReasons attribute below. (Keywords: pending, pending-held, processing, processing-stopped, canceled, aborted, completed) [RFC2911] §4.3.7	No
'pending-held'						No			'pending-held'	
'pending'						No			'pending'	
'processing'						No			'processing'	
'processing-stopped'						No			'processing-stopped'	
'canceled'						No			'canceled'	
'aborted'						No			'aborted'	
'completed'						No			'completed'	

[21] The IPP "job-state" Job Description attribute corresponds to the (new) "document-state" Document Description attribute.

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
job-state-message (S)	N			N/A	**AuditPool/ ProcessRun/** Comment [@Attribute="EndStatus "]	No	**x.x**	1.1	**[job-]state-message** (text(MAX)) [JS, [22]] Specifies information about the "job-state" and "job-state-reasons" attributes in human readable text localized by the Printer according to the natural language supplied in the client's query request. (example: "Job completed successfully with warnings" for an English request) [RFC2911] §4.3.9	No
job-state-reasons (S) work this in 2003 to incorporate image state and color workflow primitives	L			N/A	Unknown?? JDF ISSUE: Need software interpretable codes for common processing and completion reasons.	No	**x.x**	1.1	**job-state-reasons** (1setOf type2 keyword) [JS, -[23]] Provides additional information about this Job's current state. (Keywords: none, aborted-by-system, canceled-at-device, canceled-by-operator, canceled-by-user, completed-successfully, completed-with-errors, completed-with-warnings, compression-error, document-access-error, document-format-error, incoming, interpreting, job-data-insufficient, job-hold-until-specified, job-password-wait, job-restartable, job-resuming, job-saved-successfully, job-save-error, job-saving, job-scheduling, job-suspended, job-suspended-by-operator, job-suspended-by-system, job-suspended-by-user, job-suspending, outgoing, printer-stopped, printer-stopped-partly, printing, processing-to-stop-point, proof-print-wait, queued, queued-for-marker, queued-in-device, resources-are-not-ready, resources-are-not-supported, service-off-line, spooling, streaming, submission-interrupted, transforming, unsupported-compression, unsupported-document-format, warnings-detected) [RFC2911] §4.3.8, [adm-ops] §9.1, [override]	No

[22] The IPP "job-state-message" Job Description attribute corresponds to the (new) "document-state-message" Document Description attribute.
[23] The IPP "job-state-reasons" Job Description attribute corresponds to the (new) "document-state-reasons" Document Description attribute.

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
									§7.1, [prod-print] §6.1, [prod-print2] §8.3.1	
job-uri (S)	N			N/A	N/A	No	**x.x**	1.1	**job-uri** (uri) [JS, -[24]] The Printer generates and sets this attribute to a globally unique URI for this Job. (Example: ipp://www.company.com/printer/jobs/ 22). [RFC2911] §4.3.1	<any JDF note>/ @JobID
job-warnings-count (S)	N			N/A	N/A	No	**Never**	No	**[job-]warnings-count** (integer(0:MAX)) [JS, DS] The total number of warnings that a Printer has generated while processing and printing this Job/Document. [override] §6.1	No
last-document	L		10	Unknown	Unknown	No (X)	**x.x**		**last-document** (boolean) [DD] Has a 'true' value if this Document is the last Input Document for the Job. [RFC2911] §4.2.11	
media Note: Use input-tray values only.	H		5	Media/ @CatalogID	DigitalPrinting DigitalPrintingParams/ Media/ @CatalogID OR RunList/ InsertSheet/ Media/ Location/ @LocationName=*input tray name* Note: Use the Media attribute in DigitalPrintingParams because that is the media that is to be used whether loaded or not, rather than Media input to DigitalPrinting process which must be loaded before the	No	**See media-col**	1.1	**media** (type3 keyword	name(MAX)) [JT, DT, PO] The descriptive name of the medium or the name of the input tray that contains the media that the Printer uses for impressions of the Job, that is, the media that the Printer prints on. These values do *not* represent the media after folding or slitting. The media does not have to be currently loaded into an input tray, in which case it will require operator intervention in order to process the job. [RFC2911] §4.2.11	IDPrintingParams/ MediaIntent [@HoleCount=0]/ Comment [@Name="media-key"] OR Media [@HoleCount=0@ Dimension=*dim*@M ediaType=*medtyp*]/ Comment [@Name="media-key"] OR IDPrintingParams/ MediaSource/ Media [@HoleCount=0 @Dimension=*dim* @MediaType=*medt yp*]/ Comment [@Name="media-

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[24] The IPP "job-uri" Job Description attribute does not have a corresponding Document Description attribute. The "job-uri" has proved problematic enough and not really needed.

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
					process can run.					key"]
Input tray name	H	1.1 Media Source EFI Media Source Input Tray		N/A Note: Can't specify input tray name as a Product Description.	DigitalPrinting DigitalPrintingParams/ Media/ Location/ @LocationName=*input tray name* Note: Use the Media attribute in DigitalPrintingParams because that is the media that is to be used whether loaded or not, rather than Media input to DigitalPrinting process which must be loaded before the process can run.	Input Tray Name (X)	**@ media-input-tray-name [25]**		Input tray names: [RFC2911]: , , , , , , , [prod-print]: , , 'tray-2', ...	No
'any-large-format'					*AnyLargeFormat*					
'any-small-format'					*AnySmallFormat*					
'auto-select'					*AutoSelect*					
'bottom'					*Bottom*	Yes (X)			'bottom' [RFC2911]	
'bypass-tray'					*BypassTray*	Yes (X)			'bypass-tray' [prod-print]	
'bypass-tray-*N*'					*BypassTray-N*	Yes (X)				
'envelope'					*Envelope*	Yes (X)			'envelope' [RFC2911]	
'envelope-*N*'					*Envelope-N*					
'front'					*Front*					
'insert-tray'					*InsertTray*					
'insert-tray-*N*'					*InsertTray-N*					
'large-capacity'					*LargeCapacity*	Yes (X)			'large-capacity' [RFC2911]	
'large-capacity-*N*'					*LargeCapacity-N*					
'left'					*Left*					
'main'					Use *LargeCapacity*	Yes (X)			'main' [RFC2911]	
'manual'					DigitalPrintingParams/ @ManualFeed = true	Yes (X)	**@ media-manual-feed=true**		'manual' [RFC2911]	
'middle'					*Middle*	Yes (X)			'middle' [RFC2911]	
'rear'					*Rear*					
'right'					*Right*					
'side'					*Side*	Yes (X)			'side' [RFC2911]	
'top'					*Top*	Yes (X)			'top' [RFC2911]	

[25] media-input-tray-name is mapped to IPP media attribute when no other media attributes are set.

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
'tray'					*Tray*					
'tray-*n*' *n* = 1, 2, ...					*Tray-N*	Yes (X)			'tray-*n*' *n* = 1, 2, ... [prod-print]	
Descriptive Name	L						**See media-key**		Descriptive media names: Examples: [RFC2911]: 'na-letter-white', 'na-letter', 'letter', 'na-letter-transparent', 'iso-a4-white', 'iso-a4', 'iso-a4-transparent' [prod-print]: 'plain', 'pre-punched', 'transparency', 'letterhead', 'heavyweight', 'recycled', 'bond', 'labels', 'pre-printed', 'custom*N*' [pwg5101.1]: na_letter_8.5x11in, iso_a4_210x297mm, na_monarch_3.875x7.5in Installation defined names	
media-col	H	1.1 Media Selection	5	MediaIntent/	DigitalPrinting DigitalPrintingParams/ Media/	Media (X)	**@ job-media x.x document-media x.x po-media**	1.2	**media-col** (collection) [JT, DT, PO] Enables a client end user to submit a list of media characteristics to the Printer as a way to more completely specify the media to be used than the "media" attribute provides. See "media" description. [prod-print] §3.13	IDPrintingParams/ MediaIntent OR Media OR IDPrintingParams/ MediaSource/ Media
media-back-coating	M		5C	MediaIntent/ @BackCoatings (EnumerationSpan) (S): the default.	Media/ @BackCoatings (enumeration) (S)	Yes (X)	**1.0 media-back-coating**	1.2	**media-back-coating** (type3 keyword	name(MAX)) Indicates the pre-process coating applied to the back of the media. [prod-print] §3.13.10	Yes
'glossy'				Glossy	Glossy	Yes (X)			'glossy'	
'high-gloss'				HighGloss	HighGloss	Yes (X)			'high-gloss'	
'matte'				Matte	Matte	Yes (X)			'matte'	
'none'				None	None	Yes (X)			'none'	
'satin'				Satin	Satin	Yes (X)			'satin'	
'semi-gloss'				Semigloss	Semigloss	Yes (X)			'semi-gloss'	
'inkjet'				InkJet (T)	InkJet (T)				'inkjet'	
'coated'				Coated (T)	Coated (T)				'coated'	
									IPP ISSUE: Add 'inkjet' and 'coated' values?	
media-brightness	H		5C	MediaIntent/ @Brightness (S)	Media/ @Brightness (S)	No (X)	**x.x**		Brightness reflectance percentage. **Not an IPP member attribute. Need a new IPP "media-brightness" (integer(0:100) member attribute.**	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
									Brightness is the percentage reflectance of blue-white light at 457 nm per ISO Brightness defined in ISO 2470.	
media-color	H		5C	MediaIntent/ @MediaColor (S)	Media/ @MediaColorName (S)	Yes (X)	1.0 media-color	1.2	**media-color** (type3 keyword | name(MAX)) Indicates the desired color of the media being specified. . (Keywords: no-color, white, pink, yellow, blue, green, buff, goldenrod, red, gray, ivory, orange) [prod-print] §3.13.4 IPP ISSUE: JDF has added some additional values. Map names and unknown values to JDF media-front-coating-details	Yes
				Black	Black				black	
				Blue	Blue				blue	
				Brown	Brown				brown	
				Buff	Buff				**buff**	
				Cardinal	Cardinal				cardinal	
				Cyan	Cyan				cyan	
				Gold	Gold				**gold**	
				Goldenrod	Goldenrod				**goldenrod**	
				Gray	Gray				gray	
				Green	Green				green	
				Ivory	Ivory				ivory	
				Magenta	Magenta				magenta	
				MultiColor New in JDF 1.1	MultiColor New in JDF 1.1				multicolor	
				Mustard New in JDF 1.1	Mustard New in JDF 1.1				mustard	
				Orange	Orange				orange	
				N/A ??	N/A ??				other	
				Pink	Pink				pink	
				Red	Red				red	
				Royal	Royal				royal	
				Ruby	Ruby				ruby	
				Silver	Silver				silver	
				Turquoise	Turquoise				turquoise	
				Violet	Violet				violet	
				White	White				white	
				Yellow	Yellow				yellow	
media-color-name				MediaIntent/	Media/	Yes (X)	1.0 media-color-		No IPP attribute	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				@MediaColorDetails	@MediaColorNameDetails		**name**		IPP ISSUE: Should this be added?	
media-front-coating	M		5C	MediaIntent/ @FrontCoatings (EnumerationSpan) (S)	Media/ @FrontCoatings (enumeration) (S)	Yes (X)	**1.0 media-front-coating**	1.2	**media-front-coating** (type3 keyword | name(MAX)) Indicates the pre-process coating applied to the front of the media. [prod-print] §3.13.10	Yes
'glossy'				Glossy	Glossy	Yes (X)			'glossy'	
'high-gloss'				HighGloss	HighGloss	Yes (X)			'high-gloss'	
'matte'				Matte	Matte	Yes (X)			'matte'	
'none'				None	None	Yes (X)			'none'	
'satin'				Satin	Satin	Yes (X)			'satin'	
'semi-gloss'				Semigloss	Semigloss	Yes (X)			'semi-gloss'	
'inkjet'				InkJet (T)	InkJet (T)				**'inkjet'**	
'coated'				Coated (T)	Coated (T)				**'coated'**	
									IPP ISSUE: Add 'inkjet' value?	
media-grain	M		5C	LayoutIntent/ @FinishedGrainDirection (enumeration) (T) For bound materials a designer needs to specify the grain direction (usually parallel to the binding).	Media/ @GrainDirection	No (X)	**x.x**		**media-grain** (type3 keyword | name(MAX)) Indicates the grain of the media. Note: grain affects the curl and the folding of the medium. [prod-print2] §8.4.2	
'x-direction'				@FinishedGrainDirection="PerpendiculatToBind" (T)	@GrainDirection="Short Edge"				'x-direction'	
'y-direction'				@FinishedGrainDirection="ParallelToBind" (T)	@GrainDirection="Long Edge"				'y-direction'	
'system-specified'				@FinishedGrainDirection="SystemSpecified" (T)	omit GrainDirection				'system-specified'	
media-hole-count	H		5	MediaIntent/ @HoleType (S)	Media/ @HoleType (S)	Yes (X)	**1.0 media-hole-count**	1.2	**media-hole-count** (integer(0:MAX)) Indicates the number of pre-drilled holes in the desired media. [prod-print] §3.13.6	Yes
media-info	H	EFI MediaName	5	Comment/ @Name="Description" (S)	Media/Comment/ @Name="Description" (S)	Yes (X)	**x.x media-description**	1.2	**media-info** (text(255)) Specifies information that helps describe the media instance. Intended for human consumption. [prod-print] §3.13.3	Yes
media-key	H		5	LayoutIntent/	Media/	Yes (X)	**@ media-**	1.2	**media-key** (type3 keyword |	Yes

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				Layout/ Media/ @CatalogID (S)	@CatalogID (S)ISSUE: OK to use CatalogID which is the unique ID of the Media Resource?		**dimension-name**		name(MAX)) The name of the media represented as a keyword or name. Values are the same as the keyword and name values for the Media Document Processing attribute and represent the same media, except for media size and input tray keywords. [prod-print] §3.13.1	
media-material	L		5	Unknown	Unknown	No (X)	**x.x**		**media-material** (type3 keyword | name(MAX)) The material of the media. (Keywords: aluminum, dry-film, paper, polyester, wet-film) [prod-print2] §8.4.3	
media-order-count	H	EFI Media – Tabs	5	MediaIntent/ @MediaSetCount (S)	Media/ @MediaSetCount (S)	Yes (X)	**1.0 media-set-count**	1.2	**media-order-count** (integer(1:MAX)) Indicates the number of sheets, within an ordered sequence of sheets; after which the sequence begins to repeat. [prod-print] §3.13.7	Yes
media-pre-printed	H		5	MediaIntent/ @Preprinted (S)	Media/ @Preprinted (S)	Yes (X)	**1.0 media-preprinted**	1.2	**media-preprinted** (type3 keyword | name(MAX)) Indicates the pre-printed characteristics of the desired media. (Keywords: blank, pre-printed, letter-head) [prod-print] §3.13.5	Yes
							BLANK		'blank'	
							PREPRINTED		'pre-printed'	
							LETTERHEAD		'letter-head'	
media-recycled	M		5	MediaIntent/ @Recycled	Media/ @Recycled	Yes (X)	**1.0 media-recycled**	1.2	**media-recycled** (type3 keyword | name(MAX)) Indicates the recycled characteristics of the media. §3.13.11	Yes
	M		5	@Recycled="False" (Dep in JDF/1.2) @RecycledPercentage="0"	Media/ @Recycled="False"	Yes (X)		1.2	'none'	Yes
	M		5	@Recycled="True" (Dep in JDF/1.2) @RecycledPercentage="50~100"	Media/ @Recycled="True"	Yes (X)		1.2	'standard'	Yes
media-recycled-percentage	H		5	MediaIntent/ @Recycled="True" (Dep in JDF/1.2) @RecycledPercentag	Media/ [@Recycled="True"] @RecycledPercentage (T)	Yes (X)	**1.0 media-recycled-percentage**		**IPP ISSUE: Should we add "recycled-percentage" to IPP?**	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				e (T)						
media-size	H	EFI Media Dimensions EFI Media Landscape	5	MediaIntent/ @Dimensions (S) Note: LayoutIntent/ @Dimensions @FinishedDimensions (z-axis must always be set to 0). Note: @Dimensions is needed for spreads.	Media/ @Dimensions (S)	Yes (X)	see below	1.2	**media-size** (collection) Explicitly specifies the numerical media width and height dimensions that the Printer prints on before folding, slitting, and trimming. [prod-print] §3.13.8	Yes
x-dimension	H		5	see media-size above	see media-size above	Yes (X)	**1.0 media-x-dimension**	1.2	**x-dimension** (integer(0:MAX)) Size of the media in hundredths of a millimeter along the y-axis of the medium, i.e., the short (=bottom) edge. [prod-print] §3.13.8.1	Yes
y-dimension	H		5	see media-size above	see media-size above	Yes (X)	**1.0 media-y-dimension**	1.2	**y-dimension** (integer(0:MAX)) Size of the media in hundredths of a millimeter along the y-axis of the medium, i.e., the long (=left) edge. [prod-print] §3.13.8.2	Yes
media-thickness	M		5	MediaIntent/ @Thickness	Media/ @Thickness	No (X)	**x.x**		**media-thickness** (integer(1:MAX) The thickness of the media in units of one hundredth of a millimeter. This unit is equivalent to 1/2540 th of an inch. [prod-print2] §8.4.4	
media-tooth	M		5	Unknown	Unknown	No (X)	**x.x**		**media-tooth** (type3 keyword	name(MAX)) The tooth (or roughness) of the media. Note: the tooth of a medium is particularly important for those marking engines that use pens (e.g. plotters) to mark the medium. (Keywords: fine, medium, coarse) [prod-print2] §8.4.1	
media-type	H		5	MediaIntent/ @MediaType="Paper" @UserMediaType (S)	Media/ @MediaType="Paper" @MediaTypeDetails @MediaUnit="Sheet" (S) If MediaType or	Yes (X)	**@ media-type**	1.2	**media-type** (type3 keyword	name(MAX)) The medium type that the Printer uses for all impressions of the Job. [prod-print] §3.13.2, [pwg5101.1] §3	Yes

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
					MediaUnit appear below, they indicate the values to be used instead of "Paper" and "Sheet".					
'back-print-film'				N/A	N/A		**FILM_BACK_PR INT**		'back-print-film'	
'cardstock'				N/A	@MediaTypeDetails="*Cardboard*"	Yes (X)	**CARDSTOCK**		'cardstock'	
'continuous'				@UserMediaType="*Continuous*"	@MediaTypeDetails="*Continuous*"	Yes (X)	**CONTINUOUS**		'continuous'	
'continuous-long'				@UserMediaType="*ContinuousLong*"	@MediaTypeDetails="*ContinuousLong*"	Yes (X)	**CONTINUOUS_L ONG**		'continuous-long'	
'continuous-short'				@UserMediaType="*ContinuousShort*"	@MediaTypeDetails="*ContinuousShort*"	Yes (X)	**CONTINUOUS_ SHORT**		'continuous-short'	
'disc'				@MediaType="*Disc*" (T)	@MediaType="*Disc*" (T)	Yes(X)	**DISC**		'disc' IPP ISSUE: Add 'disc' value.	
'envelope'				@UserMediaType="*Envelope*"	@MediaTypeDetails="*Envelope*"	Yes (X)	**ENVELOPE**		'envelope'	
'envelope-plain'				@UserMediaType="*EnvelopePlain*"	@MediaTypeDetails="*EnvelopePlain*"	Yes (X)	**ENVELOPE_PL AIN**		'envelope-plain'	
'envelope-window''				@UserMediaType="*EnvelopeWindow*"	@MediaTypeDetails="*EnvelopeWindow*"	Yes (X)	**ENVELOPE_WI NDOW**		'envelope-window''	
'full-cut-tabs'				@UserMediaType="*FullCutTabs*"	@MediaTypeDetails="*FullCutTabs*"	Yes (X)	**FULL-CUT- TABS**		'full-cut-tabs'	
'labels'				@UserMediaType="*Labels*"	@MediaTypeDetails="*Labels*"	Yes (X)	**LABELS**		'labels'	
'letterhead'				@UserMediaType="Letterhead"	@Preprinted="Letterhead"					
'multi-layer'				@UserMediaType="*MultiLayer*"	@MediaTypeDetails="*MultiLayer*"	Yes (X)	**MULTI-LAYER**		'multi-layer'	
'multi-part-forms'				@UserMediaType="*MultiPartForm*"	@MediaTypeDetails="*MultiPartForm*"	Yes (X)	**MULTI-PART- FORMS**		'multi-part-forms'	
'photographic'				@UserMediaType="*Photographic*"	@MediaTypeDetails="*Photographic*"	Yes (X)	**PHOTOGRAPHI C, MediaCoatin g**		'photographic'	
'photographic-film'				N/A	@MediaType="Film" @MediaTypeDetails="*WetFilm*"	Yes (X)	**FILM_PHOTOG RAPHIC**		'photographic-film'	
'photographic-glossy'				@UserMediaType="*Photographic*" @FrontCoatings="Gl	@MediaTypeDetails="*Photographic*" @FrontCoatings="Glos	Yes (X)	**PHOTOGRAPHI C, MediaCoatin g**		'photographic-glossy'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				ossy"	sy"		g, **MediaCoatin g**			
'photographic-high-gloss'				@UserMediaType="*Photographic*" @FrontCoatings="HighGloss"	@MediaTypeDetails="*Photographic*" @FrontCoatings="High Gloss"	Yes (X)	**PHOTOGRAPHI C, MediaCoatin g**		'photographic-high-gloss'	
'photographic-inkjet'				@UserMediaType="*Photographic*" @FrontCoatings="Ink Jet"	@MediaTypeDetails="*Photographic*" @FrontCoatings="InkJ et"	Yes (X)	**PHOTOGRAPHI C, MediaCoatin g**		'photographic-inkjet' IPP ISSUE: Add 'photographic-inkjet' value.	
'photographic-matte'				@UserMediaType="*Photographic*" @FrontCoatings="Ma tte"	@MediaTypeDetails="*Photographic*" @FrontCoatings="Matt e"	Yes (X)	**PHOTOGRAPHI C, MediaCoatin g**		'photographic-matte'	
'photographic-satin'				@UserMediaType="*Photographic*" @FrontCoatings="Sa tin"	@MediaTypeDetails="*Photographic*" @FrontCoatings="Satin "	Yes (X)	**PHOTOGRAPHI C, MediaCoatin g**		'photographic-satin'	
'photographic-semi-gloss'				@UserMediaType="*Photographic*" @FrontCoatings="Se miGloss"	@MediaTypeDetails="*Photographic*" @FrontCoatings="Semi Gloss"	Yes (X)	**PHOTOGRAPHI C, MediaCoatin g**		'photographic-semi-gloss'	
'pre-cut-tabs'				@UserMediaType="*PreCutTabs*"	@MediaTypeDetails="*PreCutTabs*"	Yes (X)	**PRE-CUT-TABS**		'pre-cut-tabs'	
'roll'				N/A	@MediaUnit="Roll"		**ROLL**		'roll'	
'screen'				N/A	N/A		**x.x SCREEN**		'screen'	
'screen-paged'				N/A	N/A		**x.x SCREEN_PAGE D**		'screen-paged'	
'stationery'				@MediaType="Paper " (The default)	@MediaTypeDetails="*Stationery*" OR @MediaTypeDetails="*Paper*" (Dep in JDF/1.2)	Yes (X)			'stationery'	
'stationery-coated'				@FrontCoatings="Coated" (T)	@FrontCoatings="Coated" (T)	Yes (X)			'stationery-coated'	
'stationery-fine'				N/A	N/A		**x.x: STATIONERY, MediaTooth**		'stationery-fine'	
'stationery-heavyweight'				N/A	N/A		**x.x:**		'stationery-heavyweight'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
							STATIONERY, MediaWeight			
'stationery-inkjet'				@FrontCoatings="InkJet" (T)	@FrontCoatings="InkJet" (T)		N **Use MediaFrontCoating/Media Back Coating attr**		'stationery-inkjet'	
'stationery-letterhead'				UserMediaType="Letterhead"	MediaTypeDetails="Letterhead"	Yes (X)	N **Use 'stationery' and "preprinted" attr = LETTERHEAD**		'stationery-letterhead'	
'stationery-lightweight'				N/A	N/A		**x.x: STATIONERY, MediaWeight**		'stationery-lightweight'	
'stationery-preprinted'				@PrePrinted="True"	@PrePrinted="True"	Yes (X)	N **Use STATIONERY and MediaPreprinted attr = PREPRINTED**		'stationery-preprinted'	
'stationery-prepunched'				@HoleType=*hole catalog entry*	@HoleType=*hole catalog entry*	Yes (X)	**STATIONERY, MediaHoleCount**		'stationery-prepunched'	
'tab-stock'				@UserMediaType="PreCutTabs"	@MediaTypeDetails="*TabStock*"	Yes (X)	**TAB-STOCK**		'tab-stock'	
'transparency'				@MediaType="Transparency"	@MediaType="*Transparency*"	Yes (X)	**TRANSPARENCY**		'transparency'	
media-weight-metric	H		5	MediaIntent/ @Weight (S)	Media/ @Weight (S)	Yes (X)	**1.0 media-weight**	1.2	**media-weight-metric** (integer(0:MAX)) Indicates the weight of the desired media rounded to the nearest whole number of grams per square meter. [prod-print] §3.13.9	Yes
media-input-tray-check	M			Unknown	Unknown	No (X)	**@ media-input-tray-name[26]**	1.2	**media-input-tray-check** (type3 keyword | name(MAX)) [JT, DT, PO] Indicates that the characteristics of the media in the identified input tray must match the characteristics of the	No

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[26] media-input-tray-name is mapped to IPP media-input-tray-check when other media attributes are also set.

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
									media identified by the "media" or "media-col" attribute. [prod-print] §3.14	
'none'									'none'	
any "media" Input Tray Name - see above									*any "media" Input Tray Name - see above*	
multiple-document-handling	H	See specific attributes for category.		Partition using DocIndex and DocRunIndex for separate document and RunIndex for single document. (S)	Partition using DocIndex and DocRunIndex for separate document and RunIndex for single document. (S)	Yes (is covered by the individual attributes) (X)	**x.x** see document individual attributes	1.1	**multiple-document-handling** (type2 keyword) [JT] Controls whether Input Document in multi-document jobs are combined into a single Output Document or are kept as separate Output Document. Useful in combination with "cover-back", "cover-front", "finishings", "finishings-col", and "copies" Job Template attributes and for controlling the placement of one or more print-stream pages into impressions and onto media sheets for multi-document Jobs[27]. (Keywords: single-document, separate-document-uncollated-copies, separate-document-collated-copies, single-document-new-sheet) [RFC2911] §4.2.4	Yes
notify-xxx attributes:	L		2	Unknown	The CIP4 Asset Transfer wg is working on a proposal for a new CustomerMessage element that will be used for notification.	Notification (X)	**1.0 job-subscriptions** This needs more work. Tom will provide descriptions for each nottify-xxx attribute. Which attributes are required by IPP? See IANA uri	1.2	notify-xxx [JD] Specifies one or more complete Event Notification Subscriptions. Each Subscription includes the Events of interest, the Delivery Method, the Notification Recipient, any additional attributes and/or user data to be delivery with the Event Notification.	

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[27] The IPP "multiple-document-handling" attribute has been made unnecessary in the PWG Semantic Model by introducing the JobFinishings, JobFinishingsCol, and JobCopies Job Processing attributes to handle the cases of combining multiple Input Documents into a single Output Document. So Finishings, FinishingsCol, and Copies are Document Processing attributes that are intended to handle the separate Output Documents cases. Need to do the same for CoverFront and CoverBack.

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
							schemes.			
notify-recipient-uri					NodeInfo/NotificationFilter/ @Locator @ChannelType	Yes	**1.0 subscription-send-to-uri**		notify-recipient-uri (uri) [ST] specifies the URI of the Notification Recipient and the URI scheme specifies the Push Delivery Method, if requesting a Push Delivery Method.	No
notify-pull-method					@Types	No			notify-pull-method (type2 keyword) [ST] indicating which Pull Delivery Method is to be used, if requesting a Pull Delivery Method.	
notify-events						Yes	**1.0 subscription-events**		notify-events (1setOf type2 keyword) [ST] The set of Subscribed Events for which Event Notification is desired. (Keywords: none, **printer-state-changed {printer-restarted, printer-shutdown, printer-stopped}, printer-config-changed (printer-media-changed, printer-finishings-changed}, printer-queue-order-changed, job-state-changed {job-created, job-completed, job-stopped}, job-config-changed, job-progress.**	
notify-attributes						No	**1.0 subscription-job-attributes Note: JT API job attributes only.**		notify-attributes (1setOf type2 keyword) [ST] a set of attribute names whose current values that the Printer is to send along with each Event Notification.	
notify-user-data					Comment/ @Name=Description	Yes?	**1.0 subscription-comment**		notify-user-data (octetString(63)) [ST] opaque data that the Printer includes in each Machine Consumable Event Notification for some Delivery Methods.	
notify-charset						No	**1.0 subscription-charset**		notify-charset (charset) [ST] specifies the charset to be used in the Event Notification content sent to the Notification Recipient.	
notify-natural-language					Comment/ @Language	Yes	**1.0 notification-language**		notify-natural-language (naturalLanguage) [ST] specifies the natural language to be used in any human consumable text in the Event Notification content sent to the Notification Recipient.	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
notify-time-interval						No			notify-time-interval (integer(0:MAX)) [ST]	
notify-lease-duration						No			notify-lease-duration (integer(0:67108863)) [ST] specifies the duration of the lease (in seconds) associated with the Per-Printer Subscription Object at the time the Subscription Object was created or the lease was renewed.	
notify-subscription-id (S)						No			notify-subscription-id (S)	
notify-sequence-number (S)						No			notify-sequence-number (S)	
notify-lease-expiration-time (S)						No			notify-lease-expiration-time (S)	
notify-printer-up-time (S)						No			notify-printer-up-time (S)	
notify-printer-uri (S)						No			notify-printer-uri (S)	
notify-job-id (S)						No			notify-job-id (S)	
notify-subscriber-name (S)						No			notify-subscriber-name (S)	
number-of-documents (S)	N			N/A	N/A	No	**x.x**	1.1	**number-of-documents** (integer(0:MAX)) [JS, -] The number of Documents in this Job. [RFC2911] §4.3.12	No
number-of-intervening-jobs (S)	N			N/A	N/A	No	**x.x**	1.1	**number-of-intervening-jobs** (integer(0:MAX)) [JS, -] The number of jobs that are "ahead" of this Job assuming the current scheduled order. [RFC2911] §4.3.15	No
number-up	H	1.1 Bookletmaking	7	LayoutIntent/ @NumberUp[28] (XYPair) ISSUE: How to specify that input pages are to be scaled and rotated if necessary in order to fit? TSC: Wait for JDF/1.3 to control the presentation direction of the cells.	LayoutPreparation LayoutPreparationParams/ @NumberUp[28]/PageCell/ FitPolicy/ @SizePolicy=FitToPage @RotatePolicy=Rotate Orthogonal	Number Up (X)	**1.0 job-number-up-x** **1.0 job-number-up-y** **x.x document-number-up-x** **x.x document-number-up-y** **x.x po-number-up-x** **x.x po-number-up-y**	1.1	**number-up** (integer(1:MAX)) [JT, DT, PO] Indicates the number of Input pages that the Printer is to image on one Finished Page Image. The input pages are scaled and rotated to fit so that no data is lost. [RFC2911] §4.2.9	Yes

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[28] In JDF/1.1, the X and Y values of the NumberUp attribute were erroneously switched. So in JDF/1.1 and JDF/1.2 X is supposed to indicate the number of columns of cells in the X-direction and Y specifies the number of rows of page cells.

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
operation-id	N			N/A	N/A	No	**Never**	1.1	**operation-id** (type2 enum) [ ] Indicates which operation this request is. [RFC2911] §3.1.2	No
opi-image-insertion	H		C	ProofingIntent/ JDF/ ImageReplacementParams/ @ImageReplacementStrategy (P)	ImageReplacement ImageReplacementParams/ @ImageReplacementStrategy				**opi-image-insertion** (type2 keyword) [JT, DT, PO] Indicates the type of high resolution Open Prepress Interface (OPI) [OPI] image insertion to be performed by the Printer at RIP time for PostScript [PostScript] and PDF [PDF] documents. Such high resolution images may be stored in the print system, on the client ,or a network server. [color&img] §4.6.1	
				NoImages – Default value.	*NoImages* – Default value.					
'do-not-insert'				*OmitReference* – Displays only images actually embedded in the file.	*OmitReference* – Displays only images actually embedded in the file.				'do-not-insert'	
'insert'				*UseProxies* – Displays images embedded in the file and proxy versions of referenced data.	*UseProxies* – Displays images embedded in the file and proxy versions of referenced data.				Agreed: add an 'embedded-and-insert' value to IPP	
				UseReplacements – Displays embedded images plus the full resolution version of referenced images.	*UseReplacements* – Displays embedded images plus the full resolution version of referenced images.				Agreed: add an 'insert' value to IPP.	
opi-image-pre-scan	M		C	ScreeningIntent JDF/ ImageReplacementParams/ @ImagePreScanStrategy (S) (T) (P) ICS ISSUE: Is ScreeningIntent the intent under which to put ImageReplacementParams?	ImageReplacement ImageReplacementParams/ @ImagePreScanStrategy (T)				**opi-image-pre-scan** (type2 keyword) [JT, DT, PO] Indicates whether or not the Printer is to pre-scan the document data in order to validate that OPI [OPI] images referenced within the document are accessible and, optionally, to pull them to the Printer, before processing the job, i.e., before RIPping or marking. [color&img] §4.6.2	
'no-pre-scan'				NoPreScan	NoPreScan				'no-pre-scan'	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
'pre-scan'				PreScan	PreScan				'pre-scan'	
'pre-scan-and-gather'				PreScanAndGather	PreScanAndGather				'pre-scan-and-gather'	
				SystemSpecified	SystemSpecified				omit the attribute and take the Printer's default: "opi-image-pre-scan-default".	
orientation-requested	H		7	LayoutIntent/ @FinishedDimensions ICS ISSUE: What about Dimensions? Question: MediaIntent/ @Dimensions should agree? ICS ISSUE: Should this be mapped to the deprecated: *FinishedPage-Orientation?*	ISSUE: "orientation-requested" is NOT the same as page-rotation. Page rotation takes precedence for PDLs, while "orientation-requested" is lower precedence than the PDL and is used only when the PDL doesn't specifiy an orientation.	No (X)	x.x See page-rotation	1.1	**orientation-requested** (type2 enum) [JT, DT, PO] The desired orientation for printed pages for document formats that don't have a built-in orientation. [RFC2911] §4.2.10 See "page-rotation" and the explanation of the IPP coordinate system in Table 1.	Yes
'portrait'									'portrait'	
'landscape'									'landscape'	
'reverse-landscape'									'reverse-landscape'	
'reverse-portrait'									'reverse-portrait'	
original-requesting-user-name	H			CustomerInfo/ [ContactType=Customer] Person/ @FirstName @LastName (S)	CustomerInfor/ [ContactTYpe=Customer]/ Person/ @FirstName @LastName (S)	Contact Information (X)	**1.0 job-contact-info** **1.0 contact-info-types=Customer** **1.0 contact-info-name**		original-requesting-user-name (name(MAX)) [JD, -] Specifies the user name of the original user, i.e., corresponds to the "requesting-user-name" operation attribute that the original client supplied in the first request. The "requesting-user-name" operation attribute (see [RFC2911] §3.2.1.1) is updated by each client to be itself on each hop, i.e., the "requesting-user-name" is the client forwarding the request, not the original client. The "job-originating-user-name" Job Description attribute remains as the authenticated original user, not the parent Printer's authenticated host, and is forwarded by each client without changing the value. [adm-ops] §11.7.2.2	
output-bin	M		8	N/A	DigitalPrintring DigitalPrintingParams/	Output Bin Name (X)	**1.0 job-output-bin-name**	No	**output-bin** (type3 keyword	name(MAX)) [JT, DT] Specifies the	Yes

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
					@OutputBin		**x.x document-output-bin-name** **x.x po-output-bin-name**		output bin where the job is to be delivered. Note: N in keyword values is replaced by a cardinal number. [output-bin] §2.1	
'bottom'	M				*Bottom*	Yes (X)			'bottom'	
'center'	M				*Center*	Yes (X)			'center'	
'face-down'	M				*FaceDown*	Yes (X)			'face-down'	
'face-up'	M				*FaceUp*	Yes (X)			'face-up'	
'fit-media' - **Printer selects output bin based on the size of the media.**	M				*FitMedia*	Yes (X)			**Printer selects output bin based on the size of the media.** **IPP ISSUE: Should we propose to IPP WG?**	
'large-capacity'	M				*LargeCapacity*	Yes (X)			'large-capacity'	
'left'	M				*Left*	Yes (X)			'left'	
'mailbox-N'	M				*Mailbox-N*	Yes (X)			'mailbox-N'	
'middle'	M				*Middle*	Yes (X)			'middle'	
'my-mailbox'	M				*N/A*				'my-mailbox'	
'rear'	M				*Rear*	Yes (X)			'rear'	
'right'	M				*Right*	Yes (X)			'right'	
'side'	M				*Side*	Yes (X)			'side'	
'stacker-N'	M				*Stacker-N*	Yes (X)			'stacker-N'	
'top'	M				*Top*	Yes (X)			'top'	
'tray-N	M				*Tray-N*	Yes (X)			'tray-N	
default	M				Default = *SystemSpecified*	Yes (X)			**"output-bin-default" Printer attribute**	
system-specified	M				*SystemSpecified*	Yes (X)			*omitted attribute*	
									output-device (name(127)) [JT, -] [JOBX] §4.2.1 Specifies the name of the target output device for a Printer that fans-out to multiple devices (see [rfc2911] section 2.1).	
output-device-assigned (S)	N			N/A	N/A	No	**x.x**	1.1	**output-device-assigned** (name(127)) [JS, -] Identifies the output device to which the Printer has assigned this Job (Example: "Pete's Printer") [RFC2911] §4.3.13	No
page-delivery	H	1.1 Sheet Order & Face Up/Down	8	Specify page order in RunList	DigitalPrinting DigitalPrintingParams/ @PageDelivery	Page Delivery (X)	**1.0 job-page-delivery**	1.2	**page-delivery** (type2 keyword) [JT, DT] Indicates whether the pages of the job are to be delivered to the output bin or finisher in the same page order as the original document and face up or face down. See the	Yes

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
									"page-order-received" Job Template attribute and the "current-page-order" Document Description attributes. [prod-print] §3.15	
'same-order-face-up'					SameOrderFaceUp	Yes (X)			'same-order-face-up'	
'same-order-face-down'					SameOrderFaceDown	Yes (X)			'same-order-face-down'	
'reverse-order-face-up'					ReverseOrderFaceUp	Yes (X)			'reverse-order-face-up'	
'reverse-order-face-down'					ReverseOrderFaceDown	Yes (X)			'reverse-order-face-down'	
fan-fold					FanFold	Yes (X)			not an IPP value. ISSUE: Should we proposed 'fan-fold' to IPP WG? What is the semantics of 'fan-fold'?	
system-specified					SystemSpecified	Yes (X)			'system-specified' - depends on other attributes	
default					Default = SystemSpecified	Yes (X)			"page-delivery-default" Printer attribute.	
page-order-received	L 29		3	LayoutPreparation RunList/ LayoutElement/ FileSpec/ @PageOrder	LayoutPreparation RunList/ LayoutElement/ FileSpec/ @PageOrder	No (X)	x.x	1.2	**page-order-received** (type2 keyword) [JT[30], DT] Indicates the order of pages in the document data as supplied with the job. [prod-print] §3.16	LayoutElementProduction LayoutElement/ FileSpec/ @PageOrder
'1-to-n-order'					Ascending				'1-to-n-order'	Ascending
'n-to-1-order'					Descending				'n-to-1-order'	Descending
page-overrides (M)	H	See specific attributes for category.		Partition using DocIndex and DocRunIndex or RunIndex to specify page overrides. (S) See individual feature/function that is valid at the page level	Partition using DocIndex and DocRunIndex or RunIndex to specify page overrides. (S) See individual feature/function that is valid at the page level	Yes (X)	**x.x job-page-overrides x.x document-page-overrides**	No ??	**page-overrides** (1setOf collection) [JT, DT] Provides for the overriding of processing instructions on a page basis. [override] §5.2	To specify IPP Page or Document overrides, a JDF file must use the partitioning mechanism described in the section Subsets of Resources. See JDF/1.0 App F.18 using the indicated partition keys:
input-documents OR "output-documents, but not BOTH	H					Yes			**input-documents** (1setOf rangeOfInteger(MAX)) Specifies the ranges of input documents for page override processing. [override] §5.2.1	RunIndex
output-documents	L					No			**output-documents** (1setOf	DocIndex

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[29] The default of page-order-received is 1 to n which is reader order.

[30] The IPP "page-order-received" Job Template attribute is mapped to the PageOrderReceived Document Description attribute in the PWG Semantic Model [pwg-sm].

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
									rangeOfInteger(MAX)) Specifies the ranges of output documents for page override processing. [override] §5.2.2	
document-copies	L					No			**document-copies** (1setOf rangeOfInteger(MAX)) Specifies the ranges of output document copies for page override processing. [override] §5.2.3	DocCopies
pages (Mn)	H					Yes	**x.x po-pages**		**pages** (1setOf rangeOfInteger(MAX)) Specifies a range of pages in the document data to which the "page-overrides" are to be applied. Note: the "page-ranges" Document Template attribute may be supplied as one of the Template attributes to apply to the ranges of pages specified by "pages" in which case "page-ranges" indicates which pages are to be actually output. [override] §5.2.4	DocRunIndex
<any other Page Override [PO] attributes>	?					Yes??			*any other Job Template attributes that affect pages (flagged with 'PO' in this column) such as "media" or "media-col" ()*	
page-ranges (Mn)	H		4	RunList/@Pages	RunList/@Pages	Range of Pages to Output (X)	**1.0 job-output-pages** **x.x document-output-pages**	1.1	**page-ranges** (1setOf rangeOfInteger(1:MAX)) [JT, DT, PO] Specifies a range of pages in the document data to be output. The remaining pages may still need to be processed, but not output, depending on document format. [RFC2911] §4.2.7	RunList/ @Pages
page-rotation	H	EFI Media Landscape	7	N/A ICS ISSUE: Why would LayoutIntent/ @FinishedDimensions cause a rotation of the page image?	LayoutPreparation LayoutPreparationParams/ @Rotate	Rotate Page (X)	**@ job-rotation** **x.x document-rotation** **x.x po-rotation**	??	page-rotation (type3 keyword	name(MAX)) [JT, DT, PO] Specifies a rotation transformation of input page images consisting of rotation and repositioning so that the lower left corner of the rotated image coincides with the lower left corner of the original image. No scaling is done. Rotation is done before any "number-up" or "imposition-template" transformations are applied. [color&img] §4.7 See "orientation-requested" and the	IDPrinting IDPrintingParams/ IDPLayout/ @Rotate (number)

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
									explanation of the IPP coordinate system in Table 1..	
'rotate-0'	H				*Rotate0*	Yes (X)			'rotate-0'	0
'rotate-90'	H				*Rotate90*	Yes (X)			'rotate-90'	90
'rotate-180'	H				*Rotate180*	Yes (X)			'rotate-180'	180
'rotate-270'	H				*Rotate270*	Yes (X)			'rotate-270'	270
pages-per-subset (Mn)	L		4	Unknown	Unknown	No (X)	**x.x**	No	**pages-per-subset** (1setOf integer(1:MAX)) [JT[31]] Combines all of the Input Pages of all of the Input Documents into a single stream of Input-Pages. Then the Printer partitions that single stream into contiguous subsets of Input-Pages according to the list of integers. If there are more Input Pages when the Printer reaches the end of the integer list, the Printer cycles through the integer list. Each subset is defined to be an Output-Document. [override] §5.3	Yes
pdl-init-file	N		6	N/A	N/A Same as PDLResourceAlias?	No	**Never**		**pdl-init-file** (1setOf collection) [JT, DT] Controls initialization of the Printer's Page Description Language (PDL) interpreter. The Printer performs the initialization before processing each Input Document when "multiple-document-handling" is 'separate-documents-collated-copies' or 'separate-documents-uncollated-copies' and before the first Input Document when "multiple-document-handling" is 'single-document' or 'single-document-new-sheet'. [prod-print2] §5.8	N/A
pdl-init-file-location	N								**pdl-init-file-location** (uri) [JT, DT] Contains an Absolute URI [RFC 2396] that specifies the path to the directory where the initialization file to be sent to the Printer's PDL interpreter will be found. Examples:	

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[31] The IPP "pages-per-subset" attribute can only be used when the "multiple-document-handling" Job Template attribute is 'separate-documents-collated-copies' or 'separate-documents-uncollated-copes', since the purpose of the "pages-per-subset" attribute is to produce separate output documents for each subset. Otherwise, the Printer MUST ignore the "pages-per-subset" attribute. Both the "pages-per-subset" and the "multiple-document-handling" are Job level only and cannot be Document Template attributes.

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
									'ftp://printhost.printco.com/var/spool/jobinitfiledir/initfile1' or 'file:///jobinitfiledir/initfile1'. [prod-print2] §5.8.1.1	
pdl-init-file-name	N								**pdl-init-file-name** (name(MAX)) [JT, DT] Specifies the name of the initialization file within the directory specified by the PdlInitFileLocation member attribute that the Printer is to send to its PDL interpreter prior to processing the document. For example, if the PdlInitFileLocation is 'file:///jobinitfiledir/initfile1' or 'file:///jobinitfiledir/initfile1/' and the PdlInitFileName is 'a/b', then the URL for the saved job is 'file:///jobinitfiledir/initfile1/a/b' [prod-print2] §5.8.1.2	
pdl-init-file-entry	N								**pdl-init-file-entry** (name(MAX)) [JT, DT] Specifies an entry point within the init file at which the PDL interpreter starts. [prod-print2] §5.8.1.3	
Person to contact in case of problems	H		1	CustomerInfo/Contact/@... (S)	CustomerInfo/Contact/@... (S)	Contact Information (X)	**1.0 job-contact-info** **1.0 contact-info-types=Administrator** **1.0 contact-info-name**		There is no IPP attribute ISSUE: Should we add this to IPP?	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
presentation-direction-number-up	H		7	N/A	LayoutPreparation LayoutPreparationParams/ PresentationDirection OR use the deprecated: IDPrinting IDPrintingParams/ IDPLayout/ PresentationDirectionNumberUp (enumeration)	Presentation Direction (X)	**1.0 job-presentation-direction** **x.x document-presentation-direction** **x.x po-presentation-direction**	1.2	**presentation-direction-number-up** (type2 keyword) [JT, DT, PO] Specifies the placement order of the page images on a Finished-Page Image with the "number-up" attribute. [prod-print] §3.17	IDPrinting IDPrintingParams/ IDPLayout/ PresentationDirectionNumberUp[32]
'toright-tobottom'					ToRightToBottom				'toright-tobottom'	ToRightToBottom
'tobottom-toright'					ToBottomToRight				'tobottom-toright'	ToBottomToRight
'toleft-tobottom'					ToLeftToBottom				'toleft-tobottom'	ToLeftToBottom
'tobottom-toleft'					ToBottomToLeft				'tobottom-toleft'	ToBottomToLeft
'toright-totop'					ToRightToTop				'toright-totop'	ToRightToTop
'totop-toright'					ToTopToRight				'totop-toright'	ToTopToRight
'toleft-totop'					ToLeftToTop				'toleft-totop'	ToLeftToTop
'totop-toleft'					ToTopToLeft				'totop-toleft'	ToTopToLeft
printer-resolution	H		6 C	N/A See halftone.	Rendering RenderingParams/ ObjectResolution/ @Resolution (XYPair) ICS ISSUE: In which resource does Resolution reside? Decided to leave in RenderingParams . Will not support in InterpretingParams, ScreeningParams, PreviewGeneration, PSToPDFConversion, TrappingDetails	Destination or Physical Printer Resolution (X)	**1.0 job-resolution-x** **1.0 job-resolution-y** **x.x document-resolution-x** **x.x document-resolution-y** **x.x po-resolution-x** **x.x po-resolution-y**	1.1	**printer-resolution** (resolution) [JT, DT, PO] The resolution that the Printer uses for the Job in cross-feed and feed direction in units of dpi or dpcm. [RFC2911] §4.2.12	Yes
printer-uri	H		9	N/A (P)	DigitalPrinting Device/@DeviceID ICS ISSUE: Better mapping and a URL:	Destination or Physical Printer Requested	**@ job-destination-uri** **x.x document-**	1.1	**printer-uri** (uri) [JD] Specifies the URL of this Printer. The client supplies this attribute in every request. [RFC2911] §3.1.5	<any JDF node>/ NodeInfo/ @Route

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[32] The JDF/1.0 Appendix F incorrectly refers to "presentation-direction" which was renamed to "presentation-direction-number-up" in IEEE-ISTO 5100.3.

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
					<any JDF node>/ NodeInfo/ @Route or can DeviceID be a URI?	(X)	**destination-uri** **x.x po-destination-uri**			
									print-content-optimize (type2 keyword) [JT, DT, PO] Refines the value specified by the "print-quality" ([rfc2911] §4.2.13) attribute. [JOBX] §4.2.2	
									'photo'	
									'graphics'	
									'text'	
									'text-and-graphics'	
print-quality	M		6C	ProductionIntent/ @PrintPreference *Note: not including the CostEffective value in ICS.*	Interpreting InterpretingParams/ @PrintQuality Note: DigitalPrintingParams/ @PrintQuality is deprecated in JDF/1.1. Note: Quality may already be baked into the image data so quality decisions are made in the interpreter. ISSUE: Should PrintQuality be in DigitalPrintingParams since this is an instruction to the device? No, leave in InterpretingParams.	Print Quality (X)	**@ job-print-quality** **x.x document-print-quality**	1.1	**print-quality** (type2 enum) [JT, DT, PO] The print quality that the Printer uses for the Job. [RFC2911] §4.2.13	Yes
'economy'									'economy'	ISSUE: Add to IPP?
'draft'				Fastest – Request for the most time effective manufacturing process. Cost and Quality may be sacrificed for a fast turnaround time.	Draft	Yes (X)			'draft'	
'normal'				Balanced – Request	Normal	Yes (X)			'normal'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				for a manufacturing process that balances the requirements for cost, speed and quality. The default.						
'high'				HighestQuality – Request for the manufacturing process which will result in the highest quality.	High	Yes (X)			'high'	
'fine'									'fine'	ISSUE: Add to IPP?
'photo'									photo'	ISSUE: Add to IPP?
Proofing (other than simple "print a proof")	L		2 1 1 C	Unknown	Unknown		x.x		No IPP attribute	
proof-print Only need to be able to specify that a proof is to be printed and approved.	H		2 1 1 C	ProofingIntent/ ProofItem/ @ProofType=Page (enumeration) (S)	Use the appropriate other processes in a combined process. See the Implementing Proofing and SoftProofing in JDF/1.2	Proof Print (X)	x.x		**proof-print** (collection) [JT] Specifies the attributes for zero or more proof prints of the job that are to be printed prior to the printing the full run of the job. (Includes Media/MediaCol and any other Job Processing attributes). [prod-print2] §5.9	
proof-print-copies	L			ProofingIntent/ ProofItem/ @Amount (IntegerSpan)	Same as "copies": DigitalPrinting ComponentLink [@Usage="Output"] [@ProcessUsage="Go od"]/ @Amount (S)				**proof-print-copies** (integer (0:MAX)) [JT] Specifies the attributes for zero or more proof prints of the job that are to be printed prior to the printing the full run of the job. If the value is zero, no proof job is produced. After the proof job(s) are completed, the Printer sets ProofPrintCopies to zero. puts the Job in the 'pending-held' state, and adds the 'proof-print-wait' value to the Job's JobStateReasons. After examining the proof print job output, the user can print the full run of the job by using the Release-Job action (see [RFC2911] section 3.3.6). (Includes Media/MediaCol and any	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
									other Job Processing attributes). [prod-print2] §5.9.1.1	
media OR:	L			MediaIntent/ @CatalogID	DigitalPrinting DigitalPrintingParams/ Media/ @CatalogID OR RunList/ InsertSheet/ Media/ Location/ @LocationName=*input tray name*				**media** (type3 keyword | name(MAX)) The descriptive name or the name of the input tray containing the media to use for the proof job. See "media" on page 56. [prod-print] §3.5.3	See IPP "media" attribute on page 56.
media-col	L			MediaIntent/	DigitalPrinting DigitalPrintingParams/ Media/				**media-col** (collection) **Characteristics of the media to use for the proof job.** See "media-col" on page 58. [prod-print] §3.5.3	See IPP "media-col" attribute on page 58.
proof-print-contact	H	EFI Approvals	2 1 1 C	ProofingIntent/ ProofItem/ ApprovalParams/ ApprovalPerson/ Contact/ @ContactTypes=Approver Address/ @**City**=*"city"* @**Country**=*"country"* @ **PostBox**=*"post office box"* @**PostalCode**=*"zip or postal code"* @**Region**=*"state or province"* @**Street**=*"street address"* @**ExtendedAddress**=*"additional address info"* ComChannel/ @**ChannelType**=*"Phone"* @**Locator**=*"phone*	Approval ApprovalParams/ ApprovalPerson/ Contact/ @ContactTypes=Approver Address/ @**City**=*"city"* @**Country**=*"country"* @ **PostBox**=*"post office box"* @**PostalCode**=*"zip or postal code"* @**Region**=*"state or province"* @**Street**=*"street address"* @**ExtendedAddress**=*"additional address info"* ComChannel/ @**ChannelType**=*"Phone"* @**Locator**=*"phone number"* Company/	Proof Print (X)	**1.0 job-contact-info** **1.0 contact-info-types=APPROVER** **1.0 contact-info-name** **1.0 contact-info-address** **1.0 contact-info-company** **1.0 contact-info-contact-uri**		**IPP extension:** **proof-print-contact** (text(MAX)) **Specifies the name, address and/or phone number of the person to contact to approve the proof print.**	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				number" Company/ **@OrganizationName**=*"company/organization name"* Person/ **@FirstName**=*"first name"* **@FamilyName**=*"family/last name"* (T) (S)	**@OrganizationName**= *"company/organization name"* Person/ **@FirstName**=*"first name"* **@FamilyName**=*"family /last name"* (T) (S)					
Range of pages in job/document to include when generating the job ticket	M		4	Unknown	LayoutPreparation RunList/ @Pages	Range of Pages to Include (X)	**1.0 job-include-pages** **x.x document-include-pages**		No IPP attribute ~~Note~~ISSUE: Should this be added to IPP?	
rendering-intent-{graphics | images | text}	H	EFI Color – Rendering Style	6C	ColorIntent/ JDF/ ColorSpaceConversion, ColorSpaceConversionParams/ FileSpec/ @ResourceUsage="FinalTargetDevice" ColorSpaceConversionOp/ @SourceObjects={"LineArt SmoothShades" for 'graphics' | "ImagePhotographic ImageScreenShot" for 'images'| "Text" for 'test'} (S) (P)	ColorSpaceConversion, ColorSpaceConversion Params/ FileSpec/ @ResourceUsage="FinalTargetDevice" ColorSpaceConversion Op/ @SourceObjects={"Line Art SmoothShades" for 'graphics' | "ImagePhotographic ImageScreenShot" for 'images'| "Text" for 'test'}	No (X)			**rendering-intent-{graphics | images | text}** (type2 keyword) [JT, DT, PO] Specifies the rendering intent of a color document for text, graphics, and images. [color&img] §3.12	
'saturation'				Saturation	Saturation				'saturation'	
'perceptual'				Perceptual – The default in JDF/1.1, but in JDF/1.2 the default depends on the color spaces of the source and destination rendering intent (T).	Perceptual – The default in JDF/1.1, but in JDF/1.2 the default depends on the color spaces of the source and destination rendering intent (T).				'perceptual'	
'relative-colorimetric'				RelativeColorimetric	RelativeColorimetric				'relative-colorimetric'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
'absolute-colorimetric'				AbsoluteColorimetric	AbsoluteColorimetric				'absolute-colorimetric'	
'pure-text'				ISSUE: Add ext?	ISSUE: Add ext?				'pure-text'	
'blended-pictorial-and-graphics'				ISSUE: Add ext?	ISSUE: Add ext?				'blended-pictorial-and-graphics'	
'automatic'				ISSUE: Add ext?	ISSUE: Add ext? ISSUE: Or is this what the JDF/1.2 "ColorSpaceDependent" value is?				'automatic'	
request-id	N		1 0	Unknown	Unknown	No	**Never**	No	**request-id** (integer(1:MAX)) [OP] Specifies an ID generated by the client to identify this request. The Printer returns this same ID in the response to each request. [RFC2911] §3.1.2	No
requesting-user-name	H		1 0	N/A	AuditPool/ Created/ @Author	Job Created By (X)	**1.0 job-create-user-name**	1.1	**requesting-user-name** (name(MAX)) [OP] Specifies the name of the requesting user. Used by the Printer in case there is not a more secure authentication mechanism. See "original-requesting-user-name". [RFC2911] §3.2.1.1	AuditPool/ Created/ @Author
resample-method	? ?		C	ScreeningIntent JDF/ ImageCompressionP arams/ @ImageDownsample Type (S) (P) ICS ISSUE: How do these values map: Average – The program averages groups of samples to get the new downsampled value. Subsample – The program picks the middle sample from a group of samples to get the new downsampled value.	ImageReplacement ImageCompressionPar ams/ @ImageDownsampleTy pe ICS ISSUE: How do these values map: Average – The program averages groups of samples to get the new downsampled value. Subsample – The program picks the middle sample from a group of samples to get the new downsampled value.				**resample-method (type2 keyword) [JT, DT, PO]** specifies the transformation that the Printer MUST apply when converting an image (i.e. bit map) from one resolution to another resolution (higher or lower) for printing. The choice of resample-method does not affect the resolution of text or synthetic/vector graphic objects within the job to be printed. It is only applied to images (i.e. bit maps) embedded within the job's PDL data. Next version of [color&img].	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
'nearest-neighbor'									'nearest-neighbor'	
'bi-linear'									'bi-linear'	
'bi-cubic'				Bicubic	Bicubic				'bi-cubic'	
'filtered'									'filtered'	
'automatic'									'automatic'	
'special'									'special'	
resource-cleanup	H		C	N/A	FileSpec/ FileAlias/ @Disposition FileSpec/ @Disposition				**resource-cleanup** (type3 keyword | 1setOf name(MAX)) [JT, DT, PO] Identifies whether Printer is to delete or keep all files that had been explicitly transferred to the Printer *before* the job was submitted (not as part of the job submission) by any means outside the job submission protocol, such as FTP. [color&img] §4.8	
'delete'									'delete'	
'keep'									'keep'	
resource-pre-scan	H		C	LayoutIntent/ JDF/ ImageReplacement ImageReplacementP arams/ @ImagePreScanStra tegy (S) (T) (P) ICS ISSUE: Is LayoutIntent the right intent resource to hang this partial process off?	ImageReplacement ImageReplacementPar ams/ @ImagePreScanStrate gy (S) (T)				**resource-pre-scan** (type2 keyword) [JT, DT, PO] Indicates whether or not the Printer is to pre-scan the document data in order to validate that resources referenced within the document(s) are accessible and, optionally, to pull them to the Printer, before processing the job, i.e., before RIPping or marking. This attribute MUST NOT affect OPI images (see "opi-image-pre-scan" attribute. [color&img] §4.9	
'no-pre-scan'				NoPreScan	NoPreScan				'no-pre-scan'	
'pre-scan'				PreScan	PreScan				'pre-scan'	
'pre-scan-and-gather'				PreScanAndGather	PreScanAndGather				'pre-scan-and-gather'	
				SystemSpecified	SystemSpecified				omit the attribute and take the Printer's default: "opi-image-pre-scan-default".	
separator-sheets	H		5 8			Start, Separator/Sli p, End Sheets (X)	**1.0 job-separator-sheets**	1.2	**separator-sheets** (collection) [JT, DT, PO] Specifies the separator sheets to be printed with the Document. [prod-print] §3.18	Yes
separator-sheets-type	H			LayoutIntent/	LayoutPreparation	Yes (X)	**1.0 separator-**		**separator-sheets-type** (type3	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				Layout/ InsertSheet [@SheetType="SeparatorSheet" @SheetUsage (S)	LayoutPreparationParams/ InsertSheet/ [@SheetType="Separator"] @SheetUsage (S)		**sheet-type**		keyword | name(MAX)) Specifies the separator sheets type. [prod-print] §3.18.1	
'none'				omit	omit OR NoOp="None"				'none'	
'slip-sheets'				@SheetUsage="Slip"	@SheetUsage="Slip"				'slip-sheets'	
'start-sheet'				@SheetUsage="Header"	@SheetUsage="Header"				'start-sheet'	
'end-sheet'				@SheetUsage="Trailer"	@SheetUsage="Trailer"				'end-sheet'	
'both-sheets'				@SheetUsage="Header" InsertSheet/ [@SheetType="Separator"] @SheetUsage="Trailer"	@SheetUsage="Header" InsertSheet/ [@SheetType="Separator"] @SheetUsage="Trailer"				'both-sheets'	
media OR:	H			MediaIntent/ @CatalogID	DigitalPrinting DigitalPrintingParams/ Media/ @CatalogID OR RunList/ InsertSheet/ Media/ Location/ @LocationName=*input tray name*	No	**1.0 separator-sheet-media**		**media** (type3 keyword | name(MAX)) The descriptive name or the name of the input tray containing the media to use for the separator sheet. See "media" on page 56. [prod-print] §3.5.3	See IPP "media" attribute on page 56.
media-col	H			MediaIntent/	DigitalPrinting DigitalPrintingParams/ Media/	Yes (X)	**1.0 separator-sheet-media**		**media-col** (collection) **Characteristics of the media to use for the separator sheet.** See "media-col" on page 58. [prod-print] §3.5.3	See IPP "media-col" attribute on page 58.
sheet-collate note: Only applies to sheets in a document. Works with multiple-	H	1.1 Sorter Mode (Collate) EFI Finishing - Sorter Mode	8	Specify sheet order in RunList	DigitalPrinting DigitalPrintingParams/ @Collate	Collate (X)	**1.0 job-collate**	1.2	**sheet-collate** (type2 keyword) [JT, DT] Specifies whether or not the media sheets of each copy of each printed document in a job are to be in sequence. [job-prog] §3.1	Yes

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
document-handling.										
none					None	Yes (X)			'uncollated'	
sheet					Sheet	Yes (X)			'collated'	
sheet and set					SheetAndSet	No			"multiple-document-handling" = 'separate-documents-uncollated-copies'	
sheet set and job					SheetSetAndJob	Yes (X)			"multiple-document-handling" = 'separate-documents-collated-copies'	
system specified					SystemSpecified	Yes (X)			omit "multiple-document-handling" and "sheet-collate"	
default					Default = SystemSpecified	Yes (X)			"multiple-document-handling-default" and "sheet-collate-default" Printer attributes.	
sheet-completed-copy-number (S) (M)	N			N/A	N/A	No	**Never**	No	**sheet-completed-copy-number** (integer(0:MAX)) [JS, DS] The number of the copy being stacked (1) for the current Document in this Job or (2) for this Document. The copies are numbered 1, 2, 3. A 0 value means no Document is currently being stacked. The "impressions-completed-current-copy" counts the impressions as they are produced for the current copy of the current Document. [job-prog] §4.2	No
sheet-completed-document-number (S) (M)	N			N/A	N/A	No	**Never**	No	**sheet-completed-document-number** (integer(0:MAX)) [JS, -] The DocumentNumber of the Document in this Job currently being stacked. The Documents in a Job are numbered 1, 2, 3. A 0 value means no Document is currently being stacked. The "impressions-completed-current-copy" counts the impressions as they are produced for the current copy of the current Document. [job-prog] §4.3	No
sides	H	1.1 Duplex EFI Media – Plex Mode	7	LayoutIntent/ @Sides	LayoutPreparation LayoutPreparationParams/ @Sides	Sides (X)	**1.0 job-sides** **x.x document-sides** **x.x po-sides**	1.1	**sides** (type2 keyword) [JT, DT, PO] Indicates how an impression is to be placed upon the side(s) of the media. (Keywords: , ,) [RFC2911] §4.2.8	Yes

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
'one-sided-front'				OneSided	OneSidedFront	Yes (X)			'one-sided'	
'two-sided-short-edge'				TwoSidedHeadToFoot33	TwoSidedFlipX	Yes (X)			'two-sided-short-edge'	
'two-sided-long-edge'				TwoSidedHeadToHead34	TwoSidedFlipY	Yes (X)			'two-sided-long-edge'	
'one-sided-short-edge-back'				N/A	OneSidedBackFlipX	Yes (X)			**N/A - ISSUE: Should we propose** 'one-sided-short-edge-back' **to IPP WG?**	
'one-sided-long-edge-back''				N/A	OneSidedBackFlipY	Yes (X)			**N/A - ISSUE: Should we propose** 'one-sided-long-edge-back'' **to IPP WG?**	
source-{cmy | gray}-{graphics | images | text}	H C M Y i s L		C	ColorIntent/ JDF/ ColorSpaceConversionParams/ ColorSpaceConversionOp/ [@Operation="Retag"] @SourceCS= "CMY" (N) |"Gray" @SourceObjects= "Text" for 'text', "LineArt" or "SmoothShades" for 'graphics', "ImagePhotographic" or "ImageScreenShot" for 'images' FileSpec/ @ResourceUsage= "SourceProfile" @URL=*name* (where *name* includes the path to the public place where the ICC Profiles are stored on the Printer). (S) (P)	ColorSpaceConversion ColorSpaceConversion Params/ ColorSpaceConversion Op/ [@Operation="Retag"] @SourceCS= "CMY" (N) |"Gray" @SourceObjects= "Text" for 'text', "LineArt" or "SmoothShades" for 'graphics', "ImagePhotographic" or "ImageScreenShot" for 'images' FileSpec/ @ResourceUsage= "SourceProfile" @URL=*name* (where *name* includes the path to the public place where the ICC Profiles are stored on the Printer).				**source-{cmy | gray}-{graphics | images | text}** (name(MAX)) [JT, DT, PO] Identifies the name of the installed Source Color Space Profile that the Printer MUST use to map the content data to the Profile Connection Space (PCS) for graphics, images & text content in either CMY color space or for grayscale data, respectively. Relates to the way the data was encoded by the source. [color&img] §3.13 ISSUE: Add a ignore-embedded-profiles **{cmy | cmyk | rgb | gray}-{graphics | images | text}** (boolean) attribute to IPP?	
source-{cmyk | rgb}-{graphics | images | text}	H	EFI Color – RGB Source	6 C	ColorIntent/ JDF/	ColorSpaceConversion ColorSpaceConversion	No (X)			**source-{cmyk | rgb}-{graphics | images | text}** (type3 keyword |	

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[33] *TwoSidedHeadToFoot is the same as JDF TwoSidedFlipX and IPP' 'two-sided-short-edge' when the Finished Document is portrait (X FinishedDimension is < Y FinishedDimension). When X FinishedDimension is > Y FinishedDimension, then TwoSidedHeadToFoot is equivalent to JDF TwoSidedFlipY and IPP 'two-sided-long-edge'.*
[34] *TwoSidedHeadToHead is the same as JDF TwoSidedFlipY and IPP' 'two-sided-long-edge' when the Finished Document is portrait (X FinishedDimension is < Y FinishedDimension). When X FinishedDimension is > Y FinishedDimension, then TwoSidedHeadToHead is equivalent to JDF TwoSidedFlipX and IPP 'two-sided-short-edge'.*

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				ColorSpaceConversionParams/ ColorSpaceConversionOp/ [@Operation="Retag"] @SourceCS= "CMYK" for 'cmyk', "RGB" for 'rgb' @SourceObjects= "Text" for 'text', "LineArt" |"SmoothShades" for 'graphics',ImagePhotographic or ImageScreenShot for 'images' FileSpec/ @ResourceUsage="SourceProfile" @URL=*name* (where *name* includes the path to the public place where the ICC Profiles are stored on the Printer). (S) (P)	Params/ ColorSpaceConversionOp/ [@Operation="Retag"] @SourceCS= "CMYK" for 'cmyk', "RGB" for 'rgb' @SourceObjects= "Text" for 'text', "LineArt" |"SmoothShades" for 'graphics',ImagePhotographic or ImageScreenShot for 'images' FileSpec/ @ResourceUsage="SourceProfile" @URL=*name* (where *name* includes the path to the public place where the ICC Profiles are stored on the Printer). JDF ISSUE (Darmstadt): How map IPP named color spaces to JDF? Use a URL to the ICC web site?				name(MAX)) [JT, DT, PO] Identifies the name of the installed Source Color Space Profile that the Printer MUST use to map the content data to the Profile Connection Space (PCS) for graphics, images & text content in either CMYK or RGB color spaces, respectively. Relates to the way the data was encoded by the source. [color&img] §3.13	
CMYK values: 'native-cmyk'			C	ISSUE: What values correspond to IPP values? Are they the same as added for "color-emulation"?	ISSUE: What values correspond to IPP values? Are they the same as added for "color-emulation"?				CMYK values: 'native-cmyk'	
'swop' [SWOP]									'swop' [SWOP]	
'euroscale'									'euroscale'	
'japan-color'									'japan-color'	
'enhanced-swop' [SWOP]									'enhanced-swop' [SWOP]	
'euroscale-matte'									'euroscale-matte'	
'euroscale-uncoated'									'euroscale-uncoated'	
RGB values: 'srgb' [IEC 61966-2.1]									RGB values: 'srgb' [IEC 61966-2.1]	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
'smpte-240m' [SMPTE]									'smpte-240m' [SMPTE]	
status-code (S)				Unknown	Unknown		x.x		status-code (type2 enum) [JS, DS] Provides information on the processing of an operation request. The Printer MUST returns this attribute in all operation responses. [RFC2911] §3.1.6.1	JMF/ Response/ @ReturnCode
status-message (S)				Unknown	Unknown		x.x		status-message (text(255)) [JS, DS] provides a short textual description of the status of the operation. The Printer MAY returns this attribute in all operation responses. [RFC2911] §3.1.6.2	JMF/ Response/ Notification/ Comment
time-at-completed (S)	N			N/A	N/A	No	Never	1.1	time-at-completed (integer (MIN:MAX)) [JS, DS] The time at which the Job/Document completed in "printer-up-time" seconds, i.e., the value of the "printer-up-time" Printer State attribute when the Job was completed, aborted, or canceled. [RFC2911] §4.3.14.3	No
time-at-creation (S)	N			N/A	N/A	No	Never	1.1	time-at-creation (integer (MIN:MAX)) [JS, DS] The time at which the Job/Document was created in "printer-up-time" seconds, i.e., the value of the "printer-up-time" Printer State attribute when the Job was created. [RFC2911] §4.3.14.1	No
time-at-processing (S)	N			N/A	N/A	No	Never	1.1	time-at-processing (integer (MIN:MAX)) [JS, DS] The time at which the Job/Document first began processing in "printer-up-time" seconds, i.e., the value of the "printer-up-time" Printer State attribute when the Job first began processing. [RFC2911] §4.3.14.2	No
spot-name-aliases	H		6 C	Add ColorantAlias ? to ColorIntent as follows. Promote as its own resources, so can be reused: ColorIntent/ ColorantAlias/	ColorSpaceConversion ColorantControl/ ColorantAlias/ @ReplacementColoran tName (string) @SeparationSpec/* @Name				spot-name-aliases (1setOf collection) [JT, DT, PO] Replaces one or more specified colorant names with a single alias colorant name. Each collection value consists of two member attributes: replacement-colorant-name	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
				@ReplacementColorantName (string) SeparationSpec/* @Name (string) Use case: The Designer can make their job self-consistent with its colorant names.	(string)				(type2 keyword | name(MAX)) - the alias colorant name. **colorant-names-to-be-replaced** (1setOf (type2 keyword | name(MAX))) - the colorant names to be replaced by the "replacement-colorant-name". For each collection value, the Printer maps all of the colorant name strings specified by the "**colorant-names-to-be-replaced" member attribute** to the colorant name string specified by the "replacement-colorant-name" member attribute. It is RECOMMENDED that Printers process colorant names in a case insensitive manner. This attribute provides means to accommodate Printer implementations that do not follow this recommendation, in addition to dealing with other name inconsistencies. For example, **"colorant-names-to-be-replaced" =** 'Pantone 135', 'PANTONE 135' **"replacement-colorant-name" =** 'Pantone 135 CV' The Printer maps 'Pantone 135' and 'PANTONE 135' to 'Pantone 135 CV'. The Printer MUST perform the "spot-name-aliases" attribute first, if supplied, followed by the "spot-name-mapping" attribute, if supplied.	
spot-name-mapping	H	EFI Color – Spot Color Matching Note: this is needed in IPP as well.	6 C	ColorIntent/ ColorSpaceSubstitute/ @SeparationSpec/ @MappingSelection (enumeration)	ColorantControl/ ColorSpaceSubstitute/ @SeparationSpec/ @MappingSelection (enumeration) @CMYKValue				**spot-name-mapping** (1setOf collection) [JT, DT, PO] Specifies the method that the Printer must use to map named spot colors to colorant amount values. Each collection value consists of the following member	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				@CMYKValue (CMYKColor) @FileSpec Use case: Print shop customer (designer) wants to specify a specified color value substitution. Should be tied to the ICC source or destination profile of the job (either profile could be SWOP).	(CMYKColor) @FileSpec JDF ISSUE (Craig): Is the ColorSpaceSubstitute structure the right place to define the process equivalent for named spot colors?				attributes: **colorant-name** (type2 keyword | name(MAX)) - the colorant name string to be mapped. This value is the spot color name that is either in the "replacement-colorant-name" member attribute of "spot-name-aliases" or is directly found in the PDL if the "spot-name-aliases" attribute does not contain an alias for that colorant name. This member attribute MUST be present. mapping-selection (type2 keyword) - Specifies the mapping method that the Printer is to use. This member attribute MUST be supplied. Values: 'use-pdl-values' - Use color values specified in the PDL for "colorant-name". See Tech Note 5044 (page 12). 'use-local-printer-values' - Use the Printer's best local mapping for "colorant-name". 'use-process-color-values' - Use the supplied values in "process-color-values", rather than values from the PDL, for "colorant-name". process-color-values (1setOf (integer(0:100))) - four integer colorant amount values to be mapped to the colorant specified by "colorant-name" member attribute. These integers are CMYK color space values (4 numbers from 0 to 100 in IPP and CMYKColor data type in JDF) that are defined by the ICC CMYK profile specified in the "color-	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
									profile" member attribute. Each "process-color-values" instance is a set of 4-values for cyan, magenta, yellow, and black inks that together define a color that is expected to be as visually close as possible to 100% of the colorant identified by "colorant-name". This attribute MUST be supplied if the value of the "mapping-selection" member attribute is 'use-process-color-values'. "**color-profile**" (type3 keyword | name(MAX)) [JT, DT, PO] Specifies the CMYK ICC profile for the CMYK value given in the "process-color-values" member attribute. This attribute MUST be supplied if the "process-color-values" member attribute is supplied. See the CMYK keyword values of the "source-cmyk-{graphics | images | text}" attribute. The Printer MUST perform the "spot-name-aliases" attribute first, if supplied, followed by the "spot-name-mapping" attribute, if supplied. Subsequently, the Printer MUST perform any tint transforms specified in the PDL. Example: "colorant-name" = 'Pantone 135 CV' "mapping-selection" = 'use-process-color-values' "process-color-values" = '0', '23', 75', '0'. "**color-profile**" = '**swop**'	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
									The process will use the specified process color values (identified as SWOP CMYK values by the profile) for solid color (100%) objects with the named color 'Pantone 135 CV'. If a non-100 percentage tint is used for Pantone 135 CV, then the process color values are used as the basis of the tint calculation. If the job is re-targeted, for example for proofing, the SWOP profile identified by "**color-profile"** can be used to remap "process-color-values" to another output.	
trapping	H	EFI Image Quality – Trapping	6 C	Trapping TrappingDetails/ @Trapping [@TrappingType=2001] (raster trapping) (integer) ObjectResolution/ @SourceObjects (enumerations) (P) Note: IgnoreFileParams is assumed to be true (the default) when raster based trapping is requested.	Trapping TrappingDetails/ @Trapping [@TrappingType=2001] (raster trapping) (integer) ObjectResolution/ @SourceObjects (enumerations) Note: IgnoreFileParams is assumed to be true (the default) when raster based trapping is requested.	Trapping (X)			**trapping** (1setOf type2 keyword) [JT, DT, PO] Turns *in-RIP* raster-based color trapping applied by the printer on or off for the indicated source object types. The 'all' values causes the Printer to eliminate or add pixels at all adjoining object boundaries (text, graphics, images, and sweeps) when the C, M, Y, and K color planes may be mis-registered. [color&img] §3.14 ISSUE: Agree to add 'graphics', 'images', and 'text' to IPP:	
'off'	H			[@Trapping=false]	[@Trapping=false]				'off' - turns trapping off.	
'graphics'	M			[@Trapping=true] [@SourceObjects= "LineArt SmoothShades"]	[@Trapping=true] [@SourceObjects= "LineArt SmoothShades"]				'graphics'	
'images'	M			[@Trapping=true] @SourceObjects= "ImagePhotographic ImageScreenShot "	[@Trapping=true] [@SourceObjects= "ImagePhotographic ImageScreenShot "]				'images'	
'text'	M			[@Trapping=true] [@SourceObjects= "Text"]	[@Trapping=true] [@SourceObjects= "Text"]				'text'	
'all'	H			[@Trapping=true]	[@Trapping=true]				'all'	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
				[@SourceObjects= "All"]	[@SourceObjects= "All"]					
trap-width-fast	H		C	ScreeningIntent/ JDF/ Trapping TrappingDetails/ [@DefaultTrapping="true'] TrappingParams/ @TrapWidth (XYPair) (S) (T) (P)	Trapping TrappingDetails/ [@DefaultTrapping="true'] TrappingParams/ @TrapWidth (XYPair) (T) ICS ISSUE: Need to define X and Y in RunList with respect to scan direction. Use Usage="Intermediate" in resource link.				**trap-width-fast** (integer(0:MAX)) [JT, DT, PO] Specified the number of pixels at each object boundary that will be within the trapping region in the "fast scan direction". [color&img] §3.15	
trap-width-slow	H		C	ScreeningIntent/ JDF/ Trapping TrappingDetails/ [@DefaultTrapping="true'] TrappingParams/ @TrapWidth (XYPair) (S) (T) (P)	Trapping TrappingDetails/ [@DefaultTrapping="true'] TrappingParams/ @TrapWidth (XYPair) (T) ICS ISSUE: Need to define X and Y in RunList with respect to scan direction. Use Usage="Intermediate" in resource link.				**trap-width-slow** (integer(0:MAX)) [JT, DT, PO] Specified the number of pixels at each object boundary that will be within the trapping region in the "slow scan direction". [color&img] §3.16	
trc (Tone Reproduction Curves)	H		C	N/A	DigitalPrinting TransferCurvePool/ TransferCurveSet/ [@Name=Paper] TransferCurve* OR ContoneCalibration TransferFunctionControl/ [@TransferFunctionSource="Xxxx"] TransferCurvePool/ TransferCurveSet/ [@Name=Paper] TransferCurve*/				**trc** (collection) [JT, DT, PO] Apply either named configured or user-supplied Tone Reproduction Curves (TRCs) to image data after it has been transformed to the output device's CMYK color space, thus modifying the printer's response to the rendered CMYK data. Applied following with other transforms, but before device calibration. A User TRC defines a mapping from input intensity values to output intensity values. The mapping covers the complete domain of input intensity values. Also known as Intensity Transfer Function. When dealing with 8 bit continuous tone data, the color	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
					@Curve (TransferFunction) OR Separation SeparationControlParams/ TransferFunctionControl/ [@TransferFunctionSource="Xxxx"] TransferCurvePool/ TransferCurveSet/ [@Name=Paper] TransferCurve*/ @Curve (TransferFunction) (S) ISSUE: See Rainer				8 bit continuous tone data, the color intensity values for each color separation are specified as unsigned integer octets with values in the range from 0 to 255. Mapping all 256 possible intensity values of a single color separation requires a table that contains 256 octets. User supplied TRCs MUST contain all four color separation values. Data is 256 octets of curve data for a color separation. [color&img] §3.17 The effect will vary from printer to printer. ISSUE: IPP trc attribute specifies that the Printer applies the trc after all other transforms, but before any calibration transform, OK?	
trc-type					TransferFunctionControl/ @TransferFunctionSource (enumeration) Values:				**trc-type** (type2 keyword) - identifies the type of TRC. Values:	
'no-user-trc' (to eliminate system default TRC)					NoOp="false"				'no-user-trc' (to eliminate system default TRC)	
'public' (find or save in public place for use by other jobs)					Device				'public' (find or save the trc identified by "trc-name" in public place for use by other jobs)	
'private' (for use by current job only)					Custom				'private' (find or temporarily save the trc identified by "trc-name" n a private place for use by this job only)	
trc-name				ISSUE: Need name mechanism	ISSUE: Need name mechanism				**trc-name** (name(MAX)) - name of the TRC to be found or saved (if "trc-xxx-data" is supplied for each separation).	
trc-cyan-data				@Separation="cyan"	@Separation="cyan"				**trc-cyan-data** (octetString(256)) 256 octets of data for the cyan color separation.	
trc-magenta-data				@Separation="magenta"	@Separation="magenta"				**trc-magenta-data** (octetString(256)) 256 octets of data for the magenta	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
									color separation.	
trc-yellow-data				@Separation="yellow"	@Separation="yellow"				**trc-yellow-data** (octetString(256)) 256 octets of data for the yellow color separation.	
trc-black-data				@Separation="black"	@Separation="black"				**trc-black-data** (octetString(256)) 256 octets of data for the black separation.	
undefined-source-{cmy | gray}-{graphics | images | text}	H		C	We do need to provide a way for a customer to specify – "use this source profile for untagged color objects in the PDL" ColorIntent/ JDF/ ColorSpaceConversionParams/ ColorSpaceConversionOp/ [@Operation="Tag"] @SourceCS= "CMY" (N) |"Gray" @SourceObjects= "Text" for 'text', "LineArt" or "SmoothShades" for 'graphics', "ImagePhotographic" or "ImageScreenShot" for 'images' FileSpec/ @ResourceUsage= "SourceProfile" @URL=*name* (where *name* includes the path to the public place where the ICC Profiles are stored on the Printer). (S) (P)	ColorSpaceConversion ColorSpaceConversionParams/ ColorSpaceConversionOp/ [@Operation="Tag"] @SourceCS= "CMY" (N) |"Gray" @SourceObjects= "Text" for 'text', "LineArt" or "SmoothShades" for 'graphics', "ImagePhotographic" or "ImageScreenShot" for 'images' FileSpec/ @ResourceUsage= "SourceProfile" @URL=*name* (where *name* includes the path to the public place where the ICC Profiles are stored on the Printer). JDF ISSUE: How map IPP named color spaces to JDF? Use a URL to the ICC web site?				**undefined-source-{cmy | gray}-{graphics | images | text}** (name(MAX)) [JT, DT, PO] Identifies the name of the installed Source Color Space Profile that the Printer MUST use to map the *untagged* content data to the Profile Connection Space (PCS) for graphics, images & text content in either CMY color space or for grayscale data, respectively. [color&img] §3.13	
undefined-source-{cmyk | rgb}-{graphics | images |	H		C	ColorIntent/ ColorSpaceConversi	ColorSpaceConversion ColorSpaceConversion				**undefined-source-{cmyk | rgb}-{graphics | images | text}** (type3	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
text} (type3 keyword | name(MAX))				onParams/ ColorSpaceConversionOp/ [@Operation="Tag"] @SourceCS= "CMYK" for 'cmyk', "RGB" for 'rgb' @SourceObjects= "Text" for 'text', "LineArt" |"SmoothShades" for 'graphics',ImagePhotographic or ImageScreenShot for 'images' FileSpec/ @ResourceUsage="SourceProfile" @URL=*name* (where *name* includes the path to the public place where the ICC Profiles are stored on the Printer). (S) (P)	Params/ ColorSpaceConversionOp/ [@Operation="Tag"] @SourceCS= "CMYK" for 'cmyk', "RGB" for 'rgb' @SourceObjects= "Text" for 'text', "LineArt" |"SmoothShades" for 'graphics',ImagePhotographic or ImageScreenShot for 'images' FileSpec/ @ResourceUsage="SourceProfile" @URL=*name* (where *name* includes the path to the public place where the ICC Profiles are stored on the Printer).				keyword | name(MAX)) [JT, DT, PO] Identifies the name of the installed Source Color Space Profile that the Printer MUST use to map the *untagged* content data to the Profile Connection Space (PCS) for graphics, images & text content in either CMYK or RGB color spaces, respectively. [color&img] §3.13	
CMYK values: 'native-cmyk'				ICS ISSUE: What values correspond to IPP values? Are they the same as added for "color-emulation"?	ICS ISSUE: What values correspond to IPP values? Are they the same as added for "color-emulation"?				CMYK values: 'native-cmyk'	
'swop' [SWOP]									'swop' [SWOP]	
'euroscale'									'euroscale'	
'japan-color'									'japan-color'	
'enhanced-swop' [SWOP]									'enhanced-swop' [SWOP]	
'euroscale-matte'									'euroscale-matte'	
'euroscale-uncoated'									'euroscale-uncoated'	
RGB values: 'srgb' [IEC 61966-2.1]									RGB values: 'srgb' [IEC 61966-2.1]	
'smpte-240m' [SMPTE]									'smpte-240m' [SMPTE]	
version-number	N			NodeInfo/ @IPPVersion	NodeInfo/ @IPPVersion	No	**Never**	1.1	**version-number** (type2 keyword) [OP] Indicates the version number of the protocol that the client is using in the request. (Keywords: 1.0, 1.1).	Yes

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
									[RFC2911] §3.1.8	
Where/who/how to deliver final product. Assume single drop point.	H	EFI Packaging/ Shipping Info	2	DeliveryIntent/ Contact/@... (S)	Delivery DeliveryParams/ Contact/@... (S)	Contact Information (X)	**1.0 job-contact-info** **1.0 contact-info-types=Delivery** **1.0 contact-info-name** **1.0 contact-info-address**		Not an IPP attribute.	
x-image-position	H		6 or 7 ? C	N/A (P)	LayoutPreparation LayoutPreparationParams/ ImageShift/ @PositionX /FitPolicy/ @SizePolicy	Fit Policy (X)	**1.0 job-image-alignment-x** **x.x document-image-alignment-x** **x.x po-image-alignment-x** **1.0 job-fit-policy** **x.x document-fit-policy** **x.x po-fit-policy**	1.2	**x-image-position** (type2 keyword) [JT, DT, PO] Causes the specified point of the Finished-Page Image to be positioned at a specified location. [prod-print] §3.19.2	Yes
'none'					*None*	Yes (X)			'none'	
'center'					*Center*	Yes (X)			'center'	
'left'					*Left*	Yes (X)			'left'	
'right'					*Right*	Yes (X)			'right'	
x-image-shift	N		C	N/A	N/A	No	**Never**	1.2	**x-image-shift** (integer(MIN:MAX)) [JT, DT, PO] Causes the Finished-Page Image to be shifted in position with respect to the x-axis of the media. The unit of measure for this attribute is hundredths of a millimeter. The sign of the value indicates the direction of the shift. [prod-print] §3.19.3	Yes
x-side1-image-shift	H		6 or 7 ? C	N/A (P)	LayoutPreparation LayoutPreparationParams/ ImageShift/ @ShiftFront	Image Shift Front Side (X)	**1.0 job-image-shift-front-x** **x.x document-image-shift-front-x** **x.x po-image-shift-front-x**	1.2	**x-side1-image-shift** (integer(MIN:MAX)) [JT, DT, PO] Causes each Finished-Page Image that would be placed on the front side of a sheet to be shifted in position with respect to the x-axis of the media. The unit of measure for this attribute is hundredths of a millimeter. The sign of the value indicates the direction of the shift. [prod-print]	Yes

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
									§3.19.4	
x-side2-image-shift	H		6 or 7 ? C	N/A (P)	LayoutPreparation LayoutPreparationParams/ImageShift/ @ShiftBack	Image Shift Back Side (X)	**1.0 job-image-shift-back-x** **x.x document-image-shift-back-x** **x.x po-image-shift-back-x**	1.2	**x-side2-image-shift** (integer(MIN:MAX)) [JT, DT, PO] Causes each Finished-Page Image that would be placed on the back side of a sheet to be shifted in position with respect to the x-axis of the media. The unit of measure for this attribute is hundredths of a millimeter. The sign of the value indicates the direction of the shift. [prod-print] §3.19.5	Yes
y-image-position	H		6 or 7 ? C	N/A (P)	LayoutPreparation LayoutPreparationParams/ ImageShift/ @PositionY /FitPolicy/ @SizePolicy	Fit Policy (X)	**1.0 job-image-alignment-y** **x.x document-image-alignment-y** **x.x po-image-alignment-y** **1.0 job-fit-policy** **x.x document-fit-policy** **x.x po-fit-policy**	1.2	**y-image-position** (type2 keyword) [JT, DT, PO] Causes the specified point of the Finished-Page Image to be positioned at a specified location. [prod-print] §3.19.6	Yes
'none'					*None*	Yes (X)			'none'	
'center'					*Center*	Yes (X)			'center'	
'left'					*Left*	Yes (X)			'left'	
'right'					*Right*	Yes (X)			'right'	
y-image-shift	N		C	N/A	N/A	No	**Never**	1.2	**y-image-shift** (integer(MIN:MAX)) [JT, DT, PO] Causes the Finished-Page Image to be shifted in position with respect to the y-axis of the media. The unit of measure for this attribute is hundredths of a millimeter. The sign of the value indicates the direction of the shift. [prod-print] §3.19.7	Yes
y-side1-image-shift	H		6 or 7 ? C	N/A (P)	LayoutPreparation LayoutPreparationParams/ ImageShift/ @ShiftFront	Image Shift Front Side (X)	**1.0 job-image-shift-front-y** **x.x document-image-shift-front-y** **x.x po-image-shift-front-y**	1.2	**y-side1-image-shift** (integer(MIN:MAX)) [JT, DT, PO] Causes each Finished-Page Image that would be placed on the front side of a sheet to be shifted in position with respect to the y-axis of the media. The unit of measure for this attribute is hundredths of a millimeter.	Yes

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
									The sign of the value indicates the direction of the shift. [prod-print] §3.19.8	
y-side2-image-shift	H		6 or 7 ? C	N/A (P)	LayoutPreparation LayoutPreparationParams/ ImageShift /@ShiftBack	Image Shift Back Side (X)	**1.0 job-image-shift-back-y** **x.x document-image-shift-back-y** **x.x po-image-shift-back-y**	1.2	**y-side2-image-shift** (integer(MIN:MAX)) [JT, DT, PO] Causes each Finished-Page Image that would be placed on the back side of a sheet to be shifted in position with respect to the y-axis of the media. The unit of measure for this attribute is hundredths of a millimeter. The sign of the value indicates the direction of the shift. [prod-print] §3.19.9	Yes
no IPP exists	H	1.1 Special (Spot) Color Handling	6 C	ColorIntent/ ColorsUsed/ SeparationSpec/ @Name (S)	DigitalPrinting ColorantControl/ ColorantParams/ SeparationSpec/ @Name (S)	Spot Color (X)			ISSUE: What is this attribute really? Does it match the new proposed IPP "spot-name-mapping" and/or "spot-name-aliases" attributes above?	
no IPP exists	M	1.1 Booketmaking	7 8	ISSUE: Want to be able to specify an interoperable BookletMaking w/o breaking it out into individual resources. Possibly a BookletMaking catalog.	same as Product Intent	Folding, Number Up, Order Pages, Stapling & Stitching, Trimming (X)				
Scaling no IPP exists							**1.0 job-scaling-percentage-x** **1.0 job-scaling-percentage-y** **x.x document-scaling-percentage-x** **x.x document-scaling-percentage-y** **x.x po-scaling-percentage-x** **x.x po-scaling-percentage-y**		No IPP attribute ISSUE: Should this be added?	
Interleave sheets no IPP exists				Unknown	LayoutPreparation LayoutPreparationPara	Interleave Sheets (X)	**1.0 job-insert-sheets**		No IPP attribute ISSUE: Should this be added?	

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
					ms/ InsertSheet/[@SheetType="Separat orSheet]"/ @SheetUsage/ @SheetFormat		**x.x document-insert-sheets** **1.0 insert-sheet-content** **1.0 insert-sheet-media** **1.0 insert-sheet-pages=0~-1** **1.0 insert-sheet-position**			
Job modified by no IPP exists				N/A	AuditPool/ Modified/ @Author	Job Modified By	**x.x**		No IPP attribute ISSUE: Should this be added?	
Job Ticket Template Comment or Description no IPP exists				N/A	JDF/ Comment/ [@Name="TemplateDe scription"] (T)	Job Ticket Template Comment or Description	**x.x**		No IPP attribute	
Job Ticket Template ID no IPP exists				N/A	JDF/ [@Template="true"]/ @TemplateID	Job Ticket Template ID	**x.x**		No IPP attribute	
Job Ticket Template Version no IPP exists				N/A	JDF/ [@Template="true"]/ @TemplateVersion	Job Ticket Template Version	**x.x**		No IPP attribute	
Page Distribution Scheme no IPP exists				Unknown	LayoutPreparation LayoutPreparationPara ms/ @PageDistributionSch eme	Page Distribution Scheme	**x.x**		No IPP attribute ISSUE: Should this be added?	
no IPP exists	L ?	EFI Catalog Imposition ContentArray	?	Unknown	Unknown	No (X)				
no IPP exists	L ?	EFI Color – CMYK Simulation	6 C	Unknown	Unknown	No (X)			Is IPP color-emulation the same?	
no IPP exists	L ?	EFI Document List - File Merge specs	3	Unknown	Unknown	No (X)				
no IPP exists	N	EFI Document List - File Edit Spec	3	N/A	N/A	No (X)				
Page Order no IPP exists	L ?	EFI Finishing - Page Order	8	Unknown	LayoutPreparation LayoutPreparationPara ms/	Page Order (X)				

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
					@PageOrder					
zz no IPP exists	L ?	EFI Finishing - Binding Gangup Unique Gangup Collate and cut Saddle Perfect Nested Saddle	8	Unknown	see Stitching see Binding	No ? (X) No ? (X) Yes Stitching (X) Yes Binding (X) No (X)				
no IPP exists	L ?	EFI General/ Account Info- User Information	1	Unknown	Unknown	No (X)				
	L	EFI Image Quality – Sharpness	C							
no IPP exists	L ?	EFI Layout Definition - n rows and columns	7	Unknown	Unknown	No (X)				
no IPP exists	L ?	EFI Layout Definition - GuttersN and GuttersM	7	Unknown	Unknown	No (X)				
no IPP exists	L ?	EFI Layout Definition - Scale	7	Unknown	Unknown	No (X)				
Fit Policy no IPP exists	L ?	EFI Layout Definition - Type (scale to fit & user defined)	7	Unknown	LayoutPreparation LayoutPreparationParams/ FitPolicy/ @SizePolicy	Fit Policy (X)				
no IPP exists	L ?	EFI Layout Definition - Bleeds	7	Unknown	Unknown	No (X)				
no IPP exists	L ?	EFI Layout Definition - Creep	7	Unknown	Unknown	No (X)				
no IPP exists	L ?	EFI Layout Content - Side and PlacedObjects	7	Unknown	Unknown	No (X)				
no IPP exists	L	EFI Media -	?	Unknown	Unknown	No (X)			Not an IPP attribute.	

IPP Attribute Name	P	PODi	Cat	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CUPS	IPP Attribute Description	JDF/1.0 IDPrinting process
	?	Imageable Area							Note: FSG PAPI is adding "media-margins" as a Printer attribute for querying the Device Capabilities. The values are the widths of top, right, bottom, and left non-imagable margins. Second set of 4 integers, if the back side is different. ISSUE: Is the EFI attribute a Job Ticket attribute which is controlling the imagable area?	
no IPP exists	H ? 35	EFI MediaSource Offset	6	Unknown	Unknown	No (X)				
no IPP exists	N ?	EFI MediaSource TrayAlignment	6	Unknown	Unknown	No (X)				
no IPP exists	L ?	EFI Printer Marks - CropMarks HorizontalArray VerticalArray Enabled	7	Unknown	Unknown	No (X)				
no IPP exists	L ?	EFI Printer Marks - SheetName Enabled Text Font CTM	7	Unknown	Unknown	No (X)				
no IPP exists	L ?	EFI Printer Marks - FoldMarks Enabled	7	Unknown	Unknown	No (X)				
no IPP exists	L ?	EFI Printer Marks - CalibrationBar Enabled Side CTM	7	Unknown	Unknown	No (X)				
no IPP exists	L ?	EFI Printer Marks - ExposureBar Enabled Side CTM	7	Unknown	Unknown	No (X)				
no IPP exists	N 36	EFI Vendor specific private	10	N/A	N/A	No (X)				

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[35] Can this be accomplished by shifting the image using the image-shift attributes?

IPP Attribute Name	P	PODi	C at	JDF 1.1 & JDF1.2 Product Intent	JDF 1.1 & JDF1.2 Process Resource	ICS for DP	Free Software Group (FSG) JTAPI	CU PS	IPP Attribute Description	JDF/1.0 IDPrinting process
		extensions								

2 Proposed clarifications and additions/changes to JDF/1.1 for JDF/1.2 needed by the Product Intent and/or Process Resource mappings *that have not yet been accepted by the TSC*

Table 3 and Table 4 contain a *summary* of the proposed clarifications and additions to JDF/1.1 for inclusion in JDF/1.2 as needed by the Product Intent and/or Process Resource mappings *that have not yet been accepted by the TSC*. These are labeled in Table 2 with "(N)" or "(W)". The entries labeled with (T) are not included in Table 3.

Table 3 - Proposed clarifications and additions/changes to JDF/1.1 for JDF/1.2 *still* needed by the *Product Intent* Resources

JDF Resource	Addition description	JDF Status	corresponding IPP attribute name
AuditPool/PhaseTime/@Status	Add "Ready" value to the enumeration, so can log when process starts, even though the process isn't completed.	Need to propose	**date-time-at-processing** (dateTime) [JS, DS]

Table 4 - Proposed clarifications and additions/changes to JDF/1.1 for JDF/1.2 *still* needed by the *Process* Resources

JDF Resource	Addition description	JDF Status	corresponding IPP attribute name
ColorSpaceConversionParams / ColorSpaceConversionOp/	Add HighlightMap resource	Need to propose	**highlight-map** (type3 keyword	name(MAX)) [JT, DT, PO]
??	??	Need to propose	**job-save-disposition** (collection) [JT]
ColorSpaceConversionParams / ColorSpaceConversionOp/ [@Operation="Retag"] @SourceCS	Add "CMY" value	Need to propose	**source-{cmy	gray}-{graphics	images	text}** (name(MAX)) [JT, DT, PO]
ColorSpaceConversionParams / ColorSpaceConversionOp/ [@Operation="Tag"] @SourceCS	Add "CMY" value	Need to propose	**undefined-source-{cmy	gray}-{graphics	images	text}** (name(MAX)) [JT, DT, PO]

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[36] Describe in spec how vendor-specific extensions should be handled.

3   Suggested extensions to IPP needed by the JDF Product Intent and/or Process Resource subset chosen

Table 5 lists the suggested extensions to the IPP Color & Imaging Specification and other IPP specifications needed by the JDF Product Intent and/or Process Resource subset chosen. See the indicated attribute name and IPP Description columns in Table 2 - IPP Attribute Mapping Table for more details. See ftp://ftp.pwg.org/pub/pwg/ipp/new_COLOR/pwg-ipp-color-and-imaging-latest-rev.doc for the latest specification. The Status column indicates the status of the proposal: Proposed to CIP4/PODi, Agreed by CIP4/PODi: to be proposed to PWG, Proposed to PWG [spec] §n.n, Approved by PWG.

This tables is out of date!!

Table 5 - Suggested extensions to IPP needed by the JDF Product Intent and/or Process Resource subset chosen

IPP attribute name	Status
adjust-hue (integer(-180:180)) [JT, DT, PO]	Proposed to PWG
adjust-profile (uri) [JT, DT, PO]	Agreed by CIP4/PODi: to be proposed to PWG
black-detection-{graphics | images | text} (boolean) [JT, DT, PO]	Agreed by CIP4/PODi: to be proposed to PWG
black-detection-threshold-**{graphics | images | text}** (integer(0:100)) [JT, DT, PO]	Proposed to CIP4/PODi
black-overprint (type2 keyword) - add a 'black-overprint-pdl' value.	Agreed by CIP4/PODi; to be proposed to PWG
edge-to-edge (type2 keyword) [JT, DT, PO] - renamed from bleed-edge-printing	Agreed by CIP4/PODi: to be proposed to PWG
additional "highlight-colorant" values to agree with JDF/1.1: **buff,** gold, goldenrod, gray, ivory, multicolor, mustard, orange, pink, sliver, turquoise, white	Agreed by CIP4/PODi: to be proposed to PWG
job-client-id (name(MAX)) [JD]	to be proposed to PWG
job-comment (text(MAX)) [JD]	Agreed by CIP4/PODi: to be proposed to PWG
job-mandatory-attributes (1setOf type2 keyword) [JD]	Proposed to CIP4/PODi, Proposed to PWG [doc-obj] §6.2.2
media-brightness (integer(0:100) - member attribute of "media-col"	Proposed to CIP4/PODi
opi-image-insertion (type2 keyword) - add 'embedded-and-insert' and 'insert' values	Agreed by CIP4/PODi; to be proposed to PWG
"output-bin" new value: 'fit-media' - Printer selects an output bin based on the size of the media.	**ISSUE: Should we propose to IPP WG?**
"page-delivery" new value: 'fan-fold' - media alternates face-up and face-down each sheet.	**ISSUE: Should we propose to IPP WG?**
proof-print (collection) - add "proof-print-contact" (text(MAX)) member attribute	Agreed by CIP4/PODi: to be proposed to PWG
Person to contact in case of problems	ISSUE: Should we add this to IPP?
resample-method (type2 keyword) [JT, DT, PO]	Proposed to PWG
"sides" new values: 'one-sided-short-edge-back' and 'one-sided-long-edge-back'	**ISSUE: Should we propose to IPP WG?**
spot-name-aliases (1setOf collection) [JT, DT, PO]	Proposed to CIP4/PODi
spot-name-mapping (1setOf collection) [JT, DT, PO]	Proposed to CIP4/PODi
trapping (1setOf type2 keyword) - add 'graphics', 'images', and 'text' values and change to 1setOf	Agreed by CIP4/PODi; to be proposed to PWG
EFI Image Quality - Black Detection [JT]	Proposed to CIP4/PODi
EFI Color – Spot Color Matching [JT]	Proposed to CIP4/PODi

4   CUPS Job Template extensions to IPP

The following attributes are listed in the "CUPS Implementation of IPP" document as CUPS extension Job Template attributes:

Table 6 - CUPS Job Template extensions to IPP

CUPS Attribute	ICS for DP
blackplot	No
brightness	No
columns	No
cpi	No
fitplot	No
gamma	No
hue	No
job-billing	Yes
job-hold-until (like IPP 1.1 except add HH:MM and HH:MM:SS GMT of next time)	Yes Hold Job
job-sheets (IPP 1.1 is singled valued whereas CUPS is 1setOf)	Yes Start, Separator, End Sheets
job-originating-host-name	Yes Job Created By
lpi	No
natural-scaling	No
page-bottom	No
page-label	No
page-left	No
page-right	No
page-set	No
page-top	No
penwidth	No
position	No
ppi	No
prettyprint	No
saturation	No
scaling	No
wrap	No

5   Attributes for the proposed PDC document

The following attributes are listed in the proposed PDC Document:

Table 7 - Attributes for the proposed PDC document

PDC Attribute	IPP Attribute	ICS for DP
form	media-col?	Yes Forms
media	media-col attribute's media-key member attribute	Yes Media

PDC Attribute	IPP Attribute	ICS for DP
tray	media	Yes Input Tray Name
resolution	printer-resolution	No
orientation	orientation-requested	Yes Rotate Page
color/monochrome	---	No
copies	copies	Yes Number of Copies

6   References

[adm-ops]
Kugler, C, Hastings, T., Lewis, H., "Internet Printing Protocol (IPP): Job and Printer Administrative Operations", <draft-ietf-ipp-adm-ops-03.txt>, July 17, 2001.

[color&img]
Hastings, T., and D. Fullman, "Internet Printing Protocol (IPP): Color and Imaging Attributes", ftp://ftp.pwg.org/pub/pwg/ipp/new_COLOR/pwg5100.8-D01-020118.pdf, work in progress, October 18, 2002.

CUPS
Common UNIX Printing System, http://www.cups.org/.

[doc-obj]
Hastings, T., and P. Zehler, "Internet Printing Protocol (IPP): Document Object", September 27, 2002, ftp://ftp.pwg.org/pub/pwg/ipp/new_DOC/IPP-Document-Object.doc, .pdf, .rtf work in progress to become IEEE-ISTO 5100.5-2001.

[EFI]
EFI Job Ticket Proposal 2002.

[finishing] IEEE-ISTO 5100.1-2001
"Internet Printing Protocol (IPP): "finishings" attribute values extension", Hastings, T., and D. Fullman, February 5, 2001, ftp://ftp.pwg.org/pub/pwg/standards/pwg5100.1.pdf

[finishing2]
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[IEC61966-2.1]
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7   Change Log

Summary of changes in reverse chronological order:

7.1   Changes to make version 0.3, September 24, 2002:

1.   Added Product Intent mapping.

2.   Added the percentages of IPP covered by the other mappings.

7.2   Changes to make version 0.4, September 28, 2002:

1.   Added Brief Descriptions of all of the IPP attributes.

2.   Added the IPP attributes in [prod-print2] and [doc-obj].

3.   Re-calculated the percentages of IPP covered in the mappings by counting all collection member attributes as well as the top level attributes.

7.3   Changes to make version 0.5, October 5, 2002:

1.   Added PODi column

2.   Updated OSDP JDF Spec column to include (X) per PODi meeting

3.   Started updating JTAPI column per 01Oct FSG Job Ticket working group meetings (updated up through cover-front)

4.   Added JDF Process Resource column and updated per OSDP JDF Spec

7.4   Changes to make version 0.6 October 14, 2002:

1.   Added (Mn) notation to indicate the attributes for which "multi-document-handling" only affects page numbering (job as a whole or each individual document).

2.   Corrected the attributes flagged with (M).

3.   Clarified that "media" and "media-col" are input media to the Printer, not output finished product media.

4.   Started reviewing (X) in OSDP JDF Spec column during Digital Printing working group meeting at GraphExpo on 10/9 (reviewed up through last-document).

7.5   Changes to make version 0.7, October 16, 2002:

1.   Instead of deprecating "**ipp-attribute-fidelity**", made it work with the new "**job-mandatory-attributes**".

2.   In "**job-mandatory-attributes**", added way to specify the member attribute in a collection attribute ("attr-name.member-name").

3.   Fixed "**pages-per-subset"** as Job level only. Clarified that it combines all Input Documents into a single contiguous Input-Pages stream and then subsetts the stream into Output Documents. Fixed the reference.

4.   Finished reviewing (X) in OSDP JDF Spec column during 15Oct Digital Printing working group meeting.

5.   Continued updating JTAPI column per 15Oct FSG Job Ticket working group meetings (updated up through jog-offset).

6. Moved descriptions of (S), (M), (Mn), (X) keys into Column heading Description table.

7. Added descriptions of categories to Column heading Description table for PODi column.

7.6 Changes to make version 0.8, October 18, 2002:

1. Added Cat column and assigned a category to each feature/function in table during combined 18Oct PODi/CIP4 Digital Printing working group meeting.

2. Removed IPP Spec column from table because the information is available in the Brief Description of IPP attributes section.

7.7 Changes to make version 0.9, October 28, 2002:

1. Continued updating JTAPI column per 22 Oct FSG Job Ticket working group meetings (updated up through job-k-octets).

2. Added Priority column and assigned a priority to each feature/function in table during combined 28Oct PODi/CIP4 Digital Printing working group meeting.

7.8 Changes to make version 0.90 (0.10), November 01, 2002:

1. Added Medium Priority.

2. Added N/A and Unknown for JDF 1.1 Product Intent and JDF 1.1 Process Resouce columns.

3. Per 10/30 PODi meeting, changed Priority of job-priority, media-back-coating, media-front-coating, media-recycled, media-grain, media-tooth, media-thickness, output-bin, print-quality to Medium.

4. Continued updating JTAPI column per 29 Oct FSG Job Ticket working group meeting (updated up through number-up)

5. Added IPP Attribute Description column and moved descriptions from end of document to table.

6. Added some fold, bind, and punch enum values from [finishing2].

7. Clarified that left, top, right, and bottom in attribute values and descriptions mean as if the document were portrait, i.e., left means the y-axis which is always the long edge and bottom means the x-axis which is always the short edge.

7.9 Changes to make version 0.91 (0.11), November 08, 2002:

1. Filled in JDF Product Intent and JDF Process columns for High Priority features/functions per PODi JT meeting in SF on 04 and 05 Nov.

2. Added new (S), (P) and (N) keys for JDF Product Intent and JDF Process columns.

3. Continued updating JTAPI column per 07 Nov FSG Job Ticket working group meeting (updated up through sides)

7.10 Changes to make version 0.92 (0.12), November 18, 2002:

1. Finished updating JTAPI column per 12 Nov FSG Job Ticket working group meeting

2. Added name of process that resource in JDF 1.1 Process Resource column is input to or output from.

3. Added the IPP Color and Imaging Job Template attributes and their descriptions.

7.11 Changes to make version 0.93 (0.13), November 18, 2002:

1. Merged some of the IPP color and EFI values together - needs review by EFI and prioritization.

2. Explained the {} notation in the color and imaging attributes in the column heading descriptions up front.

7.12 Changes to make version 0.94 (0.14), November 28, 2002:

1. For Process Resource mapping, added the notation that several Processes are separated by commas (,) when the Resource is used by more than one Process.

2. Sorted all of the attributes, including the IPP color and imaging. Made all finishing attributes have "finishings" in column 1 so sort together.

3. Added the following attributes along with their Product Intent and Process mappings: media-brightness, original-requesting-user-name.

4. Merged the following EFI attributes with their corresponding IPP attributes: EFI Image Quality – Contrast -> adjust-contrast; EFI Image Quality – Brightness -> adjust-lightness; EFI Image Quality – Sharpness -> anti-aliasing; 1.1 ColorMode EFI Color - Color Mode -> color-effects-type; 1.1 Screen EFI Image Quality - Screening -> halftone-{graphics | images | text}; EFI Color – Rendering Style -> rendering-intent-{graphics| images| text}; EFI Color – RGB Source -> source-{cmyk | rgb}-{graphics | images | text}; EFI Image Quality - Trapping -> trapping.

5. Added prioritization for all of the IPP color and imaging attributes - mostly high - needs review by the PODi/CIP4 WGs.

6. Changed the priority of EFI Color - Spot Color Matching from Low to High (need IPP attribute for that too).

7. Added Product Intent mappings for: color-emulation, imposition-template, highlight-colorant, job-accounting-sheets, job-error-sheet, media-brightness, orientation-requested, original-requesting-user-name.

8. Added the Process Resource mappings for: color-depth-yyy, color-destination-profile-back, color-destination-profile-front, color-emulation, date-time-at-completed, date-time-at-processing, font-name-requested, highlight-colorant, highlight-map-color, imposition-template, job-accounting-sheets, job-error-sheet, job-state, job-state-message, media-brightness, media-grain, opi-image-insertion, opi-image-pre-scan, orientation-requested, original-requesting-user-name, printer-resolution, print-quality, rendering-intent-{graphics| images| text}, resource-cleanup, source-{cmy | gray}-{graphics | images | text}, source-{cmyk | rgb}-{graphics | images | text} (type3 keyword | name(MAX)), trapping, trap-width-fast, trap-width-slow, trc, EFI Image Quality - Black Detection.

9. Added **Error! Reference source not found.** which contains suggested additions to JDF/1.1 for JDF/1.2 needed by Product Intent and Process Resource mappings.

10. Fixed the following Product Intent and/or Process Resource mappings: attributes-charset, attributes-natural-language, color-effects-type, compression, copies, document-uri, job-hold-until, job-sheet-message, proof-print, printer-uri, requesting-user-name, separator-sheets, source-{cmy | gray}-{graphics | images | text}, source-{cmyk | rgb}-{graphics | images | text} (type3 keyword | name(MAX)).

11. Added or Improved the IPP Description for: black-overprint, color-effects-type, halftone-{graphics | images | text}, job-printer-uri, trapping.

12. Clarified that IPP "trapping" is talking about in-RIP trapping, while JDF is talking about PDL trapping, so a JDF boolean attribute addition is needed to control in-RIP trapping.

13. Updated the percentages of each type of attribute in the Legend Table at the beginning of section 1.

7.13 Changes to make version 0.95 (0.15), December 02, 2002:

1. Fixed typos in JTAPI column

7.14 Changes to make version 0.96 (0.17), December 03, 2002:

1. Added ISSUE for adjust-xxx attributes to have smaller group discuss and decide what makes sense to support.

2. Changed JDF Intent and Process proposed syntax for bleed-edge-printing.

3. Changed black-overprint description back to previous description without PostScript reference.

4. Added ISSUE for trapping attribute to add raster-based trapping controls to JDF.

7.15 Changes to make version 0.97 (0.18), December 06, 2002:

The following changes were made as a result of the PWG Semantic Model review, December 5, and the joint CIP4 Digital Printing WG, CIP4 Color Workflow WG, PODi Job Ticketing WG, and the FSG JTAPI review, December 6:

1. Clarified that we will still review proposed JDF/1.2 additions for Medium priority attributes, so that they can get into JDF/1.2. But we will not review proposed JDF additions for Low and Never Priority attributes, since they are not planned to get into JDF/1.2

2. "adjust-xxx": After a lot of discussion of all of the "adjust-xxx" attributes, we separated the simple quick and dirty integer knob attributes from a single ICC Abstract Profile **for Preference Adjustment** attribute.

3. "adjust-xxx": Changed the Process Resource column to new (N) integer (-100:100) attributes: @ColorCorrectionParams/@CyanRed, @MagentaGreen, @YellowBlue, @Constrast, @Hue integer(-180:180), @Lightness, @Saturation.

4. "adjust-xxx": Changed the Product Intent column to (P).

5. "adjust-xxx": We changed the "adjust-xxx" attributes priorities from Medium to High (except for the new "adjust-hue" attribute) and the ICC Abstract Profile for Preferential Adjustment remains Medium.

6. "adjust-xxx": The "adjust-xxx" integer knob attributes can be used in a Product Intent context using the Process Resource. So its flagged with the (P) indicator.

7. "anti-aliasing": We removed the EFI Image Quality - Sharpness from the PODi column and added it at the end. EFI Sharpness isn't anti-aliasing.

8. "anti-aliasing": Changed the Product Intent column from Unknown to (P).

9. "black-overprint": Changed the Product Intent column from (N) to (P).

10. "black-overprint": Added 'black-overprint-pdl' as a third value for the IPP "black-overprint" attribute, which defers to the PDL setting for black overprint.

11. "black-overprint": Clarified that the Process Resource column will not provide a mapping for the 'black-overprint-off' value of IPP "black-overprint" since it doesn't seem useful to turn off the overprint on in the PDL.

12. "bleed-edge-printing": Renamed this to "edge-to-edge" printing, since bleed involves trimming/cutting off some of the bled area, but IPP is dealing with printing into the unprintable area. Will propose the same change to IPP.

13. "edge-to-edge-printing": Added this attribute with a JDF Product Intent mapping of LayoutIntent/@NonPrintableMargins (N) and a JDF Process Resource mapping of DigitalPrintingParams/@NonPrintableMargins (N).

14. "resample-method": Added this attribute from the PWG Semantic Model review of the IPP Color and Imaging attributes. Needs review by the color experts.

15. "source-{cmy | gray}–{graphics | images | text}" and "source-{cmyk | rgb}–{graphics | images | text}": Clarified that these attributes relates to the way the data was encoded by the source.

16. "EFI Image Quality – Sharpness": Added to end of table. Need a description of it.

7.16 Changes to make version 0.971 (0.19), December 07, 2002:

1. Changed JDF/1.0 App F to actual JDF/1.0 IDPrinting mapping (not finished yet).

2. Reformatted values and member attributes into separate rows in the table so that alignment across the columns in maintained by MS-WORD. Revision marks not used for the IPP values, since they were already in the document. Documented the styles used to achieve indenting of member attributes and values in the Legend Table.

3. Copied the agreed additions in version 0.97 to JDF/1.1 and IPP from Table 2 to **Error! Reference source not found.** and Table 5, respectively.

4. Highlighted all of the Unknown entries like this as an indication of where more work is needed.

5. Started to put JDF data types on a separate line inside parens in the mapping columns. This reformatting makes it must easier to read.

6. Reformatted the XPath so that line breaks occur after each element.

7.17 Changes to make version 0.972 (0.20), December 10, 2002:

1. Updated JTAPI column per 10-Dec-2002 FSG Job Ticket working group meeting to reconcile differences between High Priority column and JTAPI column for JTAPI 1.0.

7.18 Changes to make version 0.21, December 16, 2002:

The following changes were made as a result of the joint CIP4 Digital Printing WG, CIP4 Color Workflow WG, PODi Job Ticketing WG, and the FSG JTAPI review, December 11 and 12:

1. Updated JTAPI column per 10-Dec-2002 FSG Job Ticket working group meeting to reconcile differences between High Priority column and JTAPI column for JTAPI 1.0.

2. Moved the JDF/1.0 IDPrinting mapping column to be the rightmost, since the least important.

3. Defined the Normal JT attr Style for the JT API column, so hanging indent, instead of width sensitive leading spaces.

4. Highlighted in green like this each JDF addition for color and made the corresponding change in the JDF/1.1a spec (see file: JDF1.1a-4Sept2002-with-color-ext.doc) and also highlighted it like this.

5. Added the following JDF/1.1a process resources to ColorIntent: ColorCorrectionParams, SeparationControlParams, ColorSpaceConversionParams, rather than attaching a process to the Intent Node.

6. Added the following new attributes to LayoutIntent: *FinishedGrainDirection* and *NonPrintableMargins*.

7. Filled in many mappings.

7.19 Changes to make version 0.22, December 17, 2002:

The following changes were made as a result of the joint CIP4 Digital Printing WG, CIP4 Color Workflow WG, PODi Job Ticketing WG, and the FSG JTAPI review, Tuesday Dec 17:

1. Accepted revision marks immediately after the meeting, Dec 17, so revisions show things I did trying to carryout the agreements reached.

2. Clarified that the Printer applies the Adjust IPP attributes anywhere in its workflow in an implementation dependent manner.

3. For the new ScreeningIntent resource changed the names of the ScreeningIntent Resource attribute names to be the same as the corresponding ScreeningParams/ScreenSelector Process Resource attributes. The difference is in the data type which is XxxxSpan.

4. Changed the AM mapping so that both dpi and lpi IPP values are AM.

5. Added SpotFunction to the new ScreeningIntent resource.

6. Added the following resources to ColorIntent: AutomatedOverprintParams to use: OverPrintBlackText and OverPrintBlackLineArt

7. Added the following resources to ColorIntent: ColorCorrectionParams to use: (7 new) AdjustXxxx, FileSpec

8. Added the following resources to ColorIntent: ColorSpaceConversionParams to use: ColorSpaceConversionOp/(Operation, SourceCS, SourceObjects, FileSpec, (new) DestinationRenderingIntent (enumeration))

9. Added the following resources to ColorIntent: TransferFunctionControl to use: TransferFunctionSource, Name, Curve, Separation

10. Added new color name values to JDF Appendix A.2.8: Cardinal, Cyan, Magenta, Royal, Ruby.

11. Added the IPP **spot-color-matching** (1setOf (name(MAX))) attribute with mapping to EFI Spot Color Matching and JDF ColorIntent/ColorantAlias, ColorantControl/ColorantAlias, and ColorantControl/ColorSpaceSubstitute.

12. Added the IPP **black-detection-{graphics | images | text}** (boolean) attribute with mapping to EFI Image Quality - Black Detection and JDF ColorIntent/ColorSpaceConversionParams/ColorSpaceConversionOp/@RGBGray2Black (boolean) and ColorSpaceConversionParams/ColorSpaceConversionOp/@RGBGray2Black (boolean).

7.20 Changes to make version 0.23, December 18, 2002:

1. Replaced Table 3 with Shortened and simplified Table 3 and Table 4 so JDF resources are listed in alphabetical order with references to the IPP attributes where the detailed addition is listed.

7.21 Changes to make version 0.24, January 6, 2003:

The following changes were made as a result of the joint CIP4 Digital Printing WG, CIP4 Color Workflow WG, PODi Job Ticketing WG, and the FSG JTAPI review, Tuesday December 17, 2002 and Thursday, December 19, 2002:

1. Added black-detection-threshold-**{graphics | images | text}** (integer(0:100)) IPP attribute and its corresponding JDF ColorSpaceConversionParams/ColorSpaceConversionOp/@RGBGray2BlackThreshold (double) attribute.

2. Clarified "highlight-map-color".

3. Mapped IPP "print-quality" 'draft', 'normal', and 'high' to ProductionIntent/@PrintPreference 'Fastest', 'Balanced', and 'HighestQuality'

4. Added IPP "spot-name-aliases" and "sport-name-mapping" attributes with existing JDF mapping. Both map many to one and can have several target colors.

5. Added TrappingType = '2001' for raster trapping.

6. Changed the data type of TrappingParams/@TrapWidthSlow and @TrapWidthFast from integer to number, so that a fraction of a pixel can be specified for raster trapping.

7. Removed trc from the Product Intent column.

7.22 Changes to make version 0.25, January 13, 2003:

The following changes were made as a result of the joint CIP4 Digital Printing WG, CIP4 Color Workflow WG, PODi Job Ticketing WG, and the FSG JTAPI review, Thursday January 9, 2002. Ann McCarthy and Tom Hastings action item on "spot-name-mapping" added June 13:

1. Renamed "spot-color-aliases" to "spot-name-aliases" and "spot-color-matching or mapping" to "spot-name-mapping".

2. Fixed "spot-name-aliases" and started on "spot-name-mapping".

3. Finished "spot-name-mapping" and the corresponding JDF/1.2 additions.

7.23 Changes to make version 0.26, January 17, 2003:

The following changes were made as a result of the joint CIP4 Digital Printing WG, CIP4 Color Workflow WG, PODi Job Ticketing WG, and the FSG JTAPI review, Friday, January 17, 2002:

1. Updated the examples in "spot-name-aliases" and "spot-name-mapping".

7.24 Changes to make version 0.27, January 21, 2003:

1. Updated OSDP JDF Spec column to include function. that has been added to OSDP JDF Spec (Compression, Margins, Feed Orientation, Settings Policy, Message To Operator, Contact Information, Printer Resolution, Print Quality, Proof Print).

2. Added non-color open ISSUEs from Table 2 and open ISSUEs that appear in OSDP JDF Spec draft to Table 4.

3. Changed "extension" terminology to "addition" because in JDF "extension" means a vendor-specific extension that is not meant to be incorporated into the JDF base.

4. Updated some items in Table 4 based on 1/21 CIP4/PODi Digital Printing meeting.

7.25 Changes to make version 0.28, January 24, 2003:

1. Added InterpretingParams to the list of resource NOT supported by ObjectResolution - see "printer-resolution".

2. **Clarified IPP insert-after-page-number** (integer(0:MAX)) that inserting after page 0 means insert at the front, since IPP numbers pages starting at 1, not 0.

3. **Added InterpretingParams as another resource that the Digital Printing ICS will not use ObjectResolution to get the effect of "printer-resolution".**

4. **Indicated in the Intent extension table (**Table 3**) that ImageViewingStrategy is add to ProofingIntent/ProofItem.**

5. **Sorted the JDF process extension table (**Table 4**), now that non-color additions are no longer hidden text.**

7.26 Changes to make version 0.29, January 29, 2003:

1. Added IPP Event Notification and mapped them to JTAPI Subscription attributes.

7.27 Changes to make version 0.34, May 13, 2003:

1. JDF/1.2 Input Tray names after discussion in FSG JT API WG, May 13, 2003 and minor editing the JDF/1.2 spec to align.

2. Clarified that "feed-orientation" is only needed when the default edge is not wanted, such as avoiding label peeling when fed long edge first. Usually, the Printer will rotate the images to match the image orientation with the media so that the user doesn't have to supply the "feed-orientation" Job Template attribute.

7.28 Changes to make version 0.37, May 30, 2003:

1. Removed Separation process/SeparationControlParams resource from JDF 1.1 Process Resource. for black-overprint.

2. Changed DescriptiveName to DimensionName for media-key.

3. Added media-preprinted attribute as JTAPI 1.0. Added JTAPI values for media-preprinted.

4. Changed Range of Pages to Range of Pages to Include in OSDP JDF Spec column.

5. Changed JDF Spec for OSDP to ICS for Digital Printing.

6. Changed Start First Page to Force Page in ICS for DP column.

7. Updated JTAPI column to match attributes in current JTAPI UML diagrams.

8. Added features that have been added to ICS for DP that weren't in this table.

7.29 Changes to make version 0.38, June 06, 2003:

1. Changed JDF Name=MessageToOperator to Name=OperatorText.

2. Added @ as alpha description to JTAPI column heading in legend table.

3. Added @ to denote the attributes in JTAPI column that are to be included in the alpha implementation.

7.30 Changes to make version 0.41, August 27, 2003:

1. Updated the JDF Intent and Process columns to agree with TSC approved changes as of the June TSC meeting and the subsequent TSC telecons, as reflected in the August 19, 2003 TBD .doc. The tables at the end of this document have *not* been updated to summarize the changes. Instead, the status of each JDF/1.2 changes is indicated as (N), (W), or (T), correctly as of August 19. See Legend for explanation of (N), (W), and (T).

7.31 Changes to make version 0.43, September 2, 2003:

From decisions at the DP 9/2/03 telecon:

- Propose to make BindingIntent/@BindingType OPTIONAL.
- P-catalog definition. Who owns this (Finishing WG?)
  - DP needs Z-fold (Device specified unequal folds), Z-fold in thirds (equal thirds), C-fold in thirds (fold in) catalog Last post was Aug 23 by Claudia.
  - Consider additional packaging folds for finishing brochures.
  - RP – P- folds identical to F-Folds (i.e.: P-6/1 = 1/3,1/3,1/3).
  - P-Fold catalog has additional uneven Z-Folds not specified in F-Fold catalog.
- Propose making HoleMakingIntent/@HoleType needs to be changed to optional (preferred) or add SystemSpecified as a value.
  - Decided to add an R-generic value to indicate hole count is unspecified and to use what ever is appropriate.
- Propose making HoleMakingParams/@HoleType needs to be changed to optional. The preferred behavior is if not present then system specified is desired. System specified may mean no-holes or some holes.
  - Decided to add an R-generic value to indicate hole count is unspecified and to use what ever is appropriate.
- Propose adding Adding new value for SheetUsage i.e. Status – implies a status sheet (warning / error / other) is generated regardless of status. With SheetUsage=OnError, the language implies that an error sheet is not produced if there are no Errors or Warnings.
  - Decided should utilize SheetType=AccountingSheet or TrailerSheet with JobField/@ShowList.

7.32 Changes to make version 0.44, September 14, 2003:

From decisions at the DP 9/2/03 telecon:

7.33 Changes to make version 0.45, September 18, 2003:

Changed the "media" (name) and "media-col.media-key" mappings from Media/@DescriptiveName (and Media/@DimensionName) to CatalogID (which is a generic Resource ID assigned by the MIS), since "media-key" is intended to be a unique identifier.

7.34 Changes to make version 0.46, September 24, 2003:

Added results of TSC decisions at the Darmstadt meeting, September 20-24, 2003. See ISSUE and following comment. In some cases, the decision was to wait for JDF/1.3.

7.35 Changes to make version 0.47, October 16, 2003:

Finished adding the results of TSC decisions at the Darmstadt meeting, September 20-24, 2003. Accepted all revisions.

7.36 Changes to make version 0.48, October 18, 2003:

Minor fixes, and aligned with DP ICS. Added JDF/1.2 "CornerStitch" to BindingIntent/@BindingType.

Added "output-device" (name(127)) and print-content-optimize (type2 keyword) from [jobx].