# MIS to Conventional Printing – Sheet-Fed ICS

## Version 1.0 Revision A

**Date: 2007-03-29**

**File:** *ICS-MISCPS-1.0RevA.doc*, .pdf

ConventionalPrinting WG


## Abstract

This CIP4 JDF Interoperability Conformance Specification (ICS) defines the interoperability requirements for JDF Sheet-Fed Offset Printing. This ICS defines the Conformance Requirements for an implementation of a JDF Device that consumes Job Tickets for sheet-fed offset printing, and returns the Job Tickets. This ICS defines two Conformance Levels.


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# Tables

# 1 Introduction

This CIP4 Interface Conformance Specification (ICS) defines the Conformance Requirements for a subset of [JDF1.2][1] for job tickets to be processed on conventional printing sheet-fed offset presses. This ICS is intended to represent a Job that is suitable for producing sheets on sheet-fed offset presses.

This version of the ICS defines two Conformance Levels. The first level is suitable for a sheet-fed printing Device that reads JDF files and writes back the results into the JDF file. The second level supports additionally JMF Messages that allows controllers to interact dynamically with the Device. Such a Device or Controller controlling such a Device is designated as a ***Press Controller***.

## 1.1 Conformance Requirements

This ICS defines two Conformance Levels of Conformance Requirements for defining a Sheet-Fed Printing job.

To be conformant to Level 1 of this ICS, a ***MIS*** or ***Prepress Workflow System*** MUST conform to the Manager requirements in:

- [Base-ICS] Level 1
- [MIS-ICS] Level 1
- [this ICS] Level1

To be conformant to Level 1 of this ICS, a ***Press Controller*** MUST conform to the Worker requirements in:

- [Base-ICS] Level 1
- [MIS-ICS] Level 1
- [this ICS] Level 1

To be conformant to Level 2 of this ICS, a ***MIS*** or ***Prepress Workflow System*** MUST conform to the Manager requirements in:

- [Base-ICS] Level 3
- [MIS-ICS] Level 1
- [this ICS] Level1

To be conformant to Level 2 of this ICS, a ***Press Controller*** MUST conform to the Worker requirements in:

- [Base-ICS] Level 3
- [MIS-ICS] Level 1
- [this ICS] Level 1

This ICS does not repeat Conformance Requirements that the [Base-ICS] or [MIS-ICS] specify.

The value of the [JDF1.2] *ICSVersions* Attribute for Level 1 of this ICS is:

*MISCPS_L1-1.0*

The value of the [JDF1.2] *ICSVersions* Attribute for Level 2 of this ICS is:

*MISCPS_L2-1.0*

[1] A difference between Version 1.1 and 1.2 is in the handling of good and waste sheets. In version 1.2, the partition key “Condition” distinguishes good and waste.

## 1.2 Terminology

This section defines terminology used throughout this document. References to other documents are indicated with square brackets, e.g. [JDF1.2]. For most terms, see the Terminology section in [Base-ICS].

This section contains Prepress-related terms that pertain to this ICS:

***Actual Name of the Print Color*** – the 'real' name of the color used on the press and in PDF file

***Gray Box*** – See the *Terminology* section in [MIS-ICS]

***Press Controller*** – A Device or Controller that controls press devices and handles all the communication via JDF and JMF. It typically communicates with a MIS and a ***Prepress Workflow System.*** The term ***Worker*** refers to the ***Press Controller*** in this ICS. In principle, such a ***Press Controller*** plays the role of a Resource consumer.

***MIS*** – The partner system that communicates with ***Press Controllers*** using JDF/JMFs. The term ***Manager*** refers to the ***MIS*** in this ICS.

***Prepress Workflow System*** – The partner system that communicates with ***Press Controllers*** using JDF/JMFs and can provide all Prepress information. A ***Prepress Workflow System*** may provide only the Resource updates [PRECP-ICS] if it works together with a ***MIS***. If there is only a ***Prepress Workflow System*** and no ***MIS***, then the ***Prepress Workflow System*** can also play the role of a ***MIS***. Then the term ***Manager*** refers to the ***Prepress Workflow System*** in this ICS, too.

***Press Run*** – One run of a ***Sheet*** through a press. The press consists of modules that are linearly linked to a chain. One run of a ***Sheet*** through this chain represents one ***Press Run***.

***Sheet*** – The piece of paper or other material that can be printed by a sheet-fed press.

# 2 Conformance Tables – JDF Instances

## 2.1 JDF Node

This JDF Node is for Sheet-Fed Offset Printing.

**Table 1: JDF Node**

**Root Node of:** JDF Instance

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *ICSVersions* | w← | | | r? | | | Root node only. |
| *MISCPS_L1-1.0* | w← | | | r | | | Specify conformance to Level 1 of this ICS, others see: chapter 1.1Conformance Requirements. |
| *MISCPS_L2-1.0* | | w← | | | r | | Specify conformance to Level 2 of this ICS. |
| *Category* | w← | | | r | | | MUST be supplied if *Type* = "*ProcessGroup*". |
| *Printing* | w | | | r | | | |
| *Type* | w | | | r | | | MUST have one of the two values below. |

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *ConventionalPrinting* | w← | | | r | | | |
| *ProcessGroup* | w← | | | r? | | | |
| *Types* | w← | | | r? | | | Only supplied if *Type* = "*ProcessGroup*". |
| *ConventionalPrinting* | w | | | r | | | |
| *InkZoneCalculation* | w← | | | r? | | | |

# 3 Conformance Tables – Processes

## 3.1 ConventionalPrinting

The ***ConventionalPrinting*** Process defines a classical job for a sheet-fed press. In this case, the Worker does not execute an ***InkZoneCalculation*** Process. .

**Table 2: ConventionalPrinting – Input Resources**

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| **ColorantControl** | w | | | r | | | See Table 6: ColorantControl |
| **Component** (Input) | w← | | | r | | | MUST supply exactly one of **Component** (Input) or **Media**.<br>See Table 9: Component – Input. |
| **ConventionalPrintingParams** | w | | | r | | | See Table 11: ConventionalPrintingParams |
| **ExposedMedia** (Plate) | w | | | r | | | See Table 13: ExposedMedia (Plate). |
| **Media** | w← | | | r | | | MUST supply exactly one of **Component** (Input) or **Media**.<br>See Table 14: Media - Paper. |
| **Device** | w? | | | r | | | Selects the press on which this job shall be executed.<br>See Table 12: Device |

**Table 3: ConventionalPrinting – Output Resources**

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| Component | w | | | r | | | See Table 10: Component – Output. |

# 4 Conformance Tables – Gray Boxes

## 4.1 ConventionalPrinting

The ***ConventionalPrinting*** *Gray Box* combines an ***InkZoneCalculation*** Process with a ***ConventionalPrinting*** Process. This *Gray Box* is used for performing ink zone calculations before printing. For details of *Gray Boxes*, see [ICS-MIS].

The output of this *Gray Box* is identical with that one of the ***ConventionalPrinting*** Process. Compare Table 3: ConventionalPrinting – Output Resources and Table 5: GB ConventionalPrinting– Output Resources

**Table 4: GB ConventionalPrinting – Input Resources**

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| Preview | w | | | r | | | See Table 16: Preview.<br>**Note:** Table 16 specifies the use of **Preview** resources for ink zone calculation, ie. where `Preview[@PreviewUsage="Separation"]`. The text that precedes Table 16 (section 5.9 *Preview*) discusses using a **Preview** resource for visualization as well. |
| ColorantControl | w | | | r | | | See Table 6: ColorantControl. |
| Component (Input) | w← | | | r | | | MUST supply exactly one of **Component** (Plate) or **Media**.<br>See Table 9: Component – Input. |
| ConventionalPrintingParams | w | | | r | | | See Table 11: ConventionalPrintingParams |
| ExposedMedia (Plate) | w | | | r | | | See Table 13: ExposedMedia (Plate). |
| Media | w← | | | r | | | MUST supply exactly one of **Component** (Plate) or **Media**.<br>See Table 14: Media - Paper. |
| Device | w? | | | r | | | Selects the press on which this job shall be executed.<br>See Table 12: Device. |

**Table 5: GB ConventionalPrinting– Output Resources**

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| Component | w | | | r | | | See Table 10: Component – Output. |

# 5 Conformance Tables – Resources

This section specifies the input and output Resources of the ***ConventionalPrinting*** *Gray Box* and ***ConventionalPrinting*** Process.

## 5.1 ColorantControl

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

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

- DeviceColorantOrder
- ColorantOrder

The Worker MUST NOT determine the colors used on a sheet from the following Elements and Attributes of **ColorantControl**:

- ColorantParams
- *ProcessColorModel*
- **ColorPool**

**Table 6: ColorantControl**

**Input to:** ***ConventionalPrinting, GB ConventionalPrinting***

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *PartIDKeys* | w? | | | r | | | See Section 7 "*Conformance Rules – Partitioning*" |
| *SignatureName* | w | | | r | | | |
| *SheetName* | w← | | | r | | | |
| *Side* | w← | | | r | | | |
| ***all remaining values*** | !w | | | r? | | | |
| ColorantOrder | w | | | r | | | Colorant order on a sheet. It contains the colors that ColorantParams and *ProcessColorModel* define. If the Manager doesn't know the names of spot colors, then it MAY use "Spot1", "Spot2", or any other generic name. The Manager SHOULD NOT designate standard Process colors like Cyan, Magenta; |

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| | | | | | | | Yellow, and Black with a generic name.<br>See [MISPRE-ICS] for ColorantOrder. |
| ColorPool | w | | | r | | | See Table 7: ColorPool |
| DeviceColorantOrder | w? | | | r | | | Colorant order on the press. If supplied, it is strongly recommended to be the color order for printing.<br>See [JDF1.2] for DeviceColorantOrder. |

## 5.2 ColorPool

**Table 7: ColorPool**
**Referenced by:** ColorantControl

| Name or Value | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| Color | w | | | r | | | See Table 8: Color. MUST be inline elements. |

## 5.3 Color

**Table 8: Color**
**Referenced by:** ColorPool

| Name or Value | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *CMYK* | w← | | | r | | | MUST be supplied if the color is a standard Process colorant. In other words, if *CMYK* would have one of the following values:<br>1 0 0 0<br>0 1 0 0<br>0 0 1 0<br>0 0 0 1<br>For example, a black text plate can be defined with *Separation*="*Text*" and *CMYK*="*0 0 0 1*". |

| Name or Value | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *Name* | w | | | r | | | A real color name is preferable. However, *Name* MAY be generic like "Spot", "Spot1", "Spot02", "Metalic01"… |

## 5.4 Component

### 5.4.1 Component – Input

Depending on the situation, a Manager uses either a **Media** Resource or a **Component** Resource to describe the paper on which the press prints.

A Manager uses a **Component** Resource for precut Media and preprinted sheets.

**Table 9: Component – Input**

**Input to:** *ConventionalPrinting*, *GB ConventionalPrinting*

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *ComponentType* | w | | | r | | | |
| *Sheet* | w | | | r | | | |
| *Dimensions* | w | | | r | | | 3 numbers x, y, z, width, length and thickness, respectively. Thickness of 0 means unknown. (Thickness is from **Layout/Media/***@Thickness*). |
| *PartIDKeys* | w | | | r | | | See Section 7 "Conformance Rules – Partitioning". |
| *SignatureName* | w | | | r | | | |
| *SheetName* | w | | | r | | | |
| ***all remaining values*** | !w | | | r? | | | |
| **Layout** | w | | | r? | | | Contains information about sheet related **Media**. MUST supply in order to provide further **Media** information besides what the *Dimensions* Attribute provides.<br>See {JDF1.2]. |

### 5.4.2 Component – Output

**Table 10: Component – Output**

**Output from:** *ConventionalPrinting*, *GB ConventionalPrinting*

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *DescriptiveName* | w | | | r | | | Human readable *Sheet* name. MUST be specified for each sheet. |
| *ComponentType* | w | | | r | | | |
| *Sheet* | w | | | r | | | |
| *Dimensions* | w?<br>r? | | | r?<br>w | | | *Sheet* dimension for Finishing purposes. |
| *PartIDKeys* | w | | | r | | | MUST be partitioned at least by *SignatureName*, *SheetName* and *Condition*. For further details, see Section 7 "Conformance Rules – Partitioning". |
| *SignatureName* | w | | | r | | | |
| *SheetName* | w | | | r | | | |
| *Condition* | w | | | r | | | For a partition where Component/[@Condition ="Good"], the Component/@IsWaste MUST be "false".<br>The output **Component** MUST have at least one partition where Component/[@Condition ="Good"] |
| ***all remaining values*** | !w | | | r? | | | |
| **Layout** | w? | | | r? | | | Contains information about sheet related **Media**. SHOULD contain a reference to the input **Media** of the Process. |

## 5.5 ConventionalPrintingParams

**Table 11: ConventionalPrintingParams**

**Input to:** *ConventionalPrinting*, *GB ConventionalPrinting*

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *DescriptiveName* | w? | | | r? | | | Human readable name of the ***Press Run***. |
| *FirstSurface* | w← | | | r | | | MUST supply if this job specifies only the second run of a *WorkAndTurn* or |

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| | | | | | | | *WorkAndTumble* job. |
| *Back* | w← | | | r | | | Specifies that this job is only for the second ***Press Run*** of a *WorkAndTurn* or *WorkAndTumble* print job.<br>For example, the Manager MUST supply this value if a *WorkAndTurn* job has been interrupted after the first run and is submitting the job again for the second run. |
| *PrintingType* | w | | | r | | | |
| *SheetFed* | w← | | | r | | | |
| *WorkStyle* | w | | | r | | | |
| *Simplex* | w← | | | r? | | | Defines one ***Press Run***. |
| *Perfecting* | w← | | | r? | | | If specified, the Worker MUST use inline perfecting. |
| *WorkAndBack* | w← | | | r | | | Defines one ***Press Run*** if the press uses inline perfecting and implicitly defines two ***Press Runs*** if the press doesn't use inline perfecting. |
| *WorkAndTumble* | w← | | | r | | | Defines implicitly two ***Press Runs***. |
| *WorkAndTurn* | w← | | | r | | | Defines implicitly two ***Press Runs***. |
| *WorkAndTwist* | !w | | | r? | | | |
| *Ink* | w? | | | r? | | | Defines inline varnishing in a varnishing module.<br>**Note:** by contrast, varnishing in a print unit is represented by an **Ink** partition partitioned by Separation with `Ink/[@Family="Varnish"]` and an associated **ExposedMedia** partition, where both are explicit input resources to the ***ConventionalPrinting*** process **.** |
| *PartIDKeys* | w? | | | r | | | See Section 7 "*Conformance Rules – Partitioning*" |
| *SignatureName* | w← | | | r | | | |
| *SheetName* | w← | | | r | | | |
| *Side* | w← | | | r | | | |
| ***all remaining values*** | !w | | | r? | | | |

## 5.6 Device

The Manager MUST NOT partition a Device Resource. If a job requires multiple Devices to produce it, the Manager MUST supply a separate JDF Node to each Device.

**Table 12: Device**

**Input to:** *ConventionalPrinting*, *GB ConventionalPrinting*

| Name or Value | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| | | | | | | | See [MIS-ICS] for details of this Resource. |

## 5.7 ExposedMedia

**Table 13: ExposedMedia (Plate)**

**Input to:** *ConventionalPrinting*, *GB ConventionalPrinting*

| Name or Value | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *DescriptiveName* | w← | | | r | | | ***Actual Name of the Print Color***. If the Manager doesn't know the correct value, either it MUST NOT supply this Attribute or it MUST supply this Attribute with an empty value. The Manager MUST NOT provide human readable descriptions instead of the ***Actual Name of the Print Color***.<br><br>Also, if the Separation is equal to the ***Actual Name of the Print Color***, the Manager MUST provide this Attribute to signal the Worker that the ***MIS*** or ***Prepress Workflow System*** has confirmed the color name |
| *PartIDKeys* | w | | | r | | | See Section 7 "*Conformance Rules – Partitioning*" |
| *SignatureName* | w | | | r | | | |
| *SheetName* | w | | | r | | | |
| *Side* | w | | | r | | | |
| *Separation* | w | | | r | | | |
| ***all remaining values*** | !w | | | r? | | | |
| **Media** | w | | | r | | | Plate **Media** description with *Dimension* Attribute for the plate if known.<br><br>See Table 15: Media - Plate |

## 5.8 Media

Table 14 defines the **Media** resource that describes the printing material, i.e. the paper. Table 15 defines the **Media** resource if referenced from an **ExposedMedia** that describes a plate.

**Table 14: Media - Paper**

**Input to:** *ConventionalPrinting*, *GB ConventionalPrinting*

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *DescriptiveName* | w | | | r | | | Human readable name to help the operator select the correct media. |
| *MediaType* | w | | | r | | | |
| *Paper* | w | | | r | | | |
| *Thickness* | w | | | r | | | |
| *Weight* | w | | | r | | | |
| *Dimension* | w | | | r | | | |
| *PartIDKeys* | w? | | | r | | | See Section 7 "*Conformance Rules – Partitioning*" |
| *SignatureName* | w | | | r | | | |
| *SheetName* | w← | | | r | | | |
| ***all remaining values*** | !w | | | r? | | | |

**Table 15: Media - Plate**

**Referenced by:** ExposedMedia (Plate)

**Input to:** *ConventionalPrinting*, *GB ConventionalPrinting*

| Name | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *MediaType* | w | | | r | | | |
| *Plate* | w | | | r | | | |
| *PartIDKeys* | w? | | | r | | | See Section 7 "*Conformance Rules – Partitioning*" |
| *SignatureName* | w | | | r | | | |
| *SheetName* | w← | | | r | | | |
| *Side* | w← | | | r | | | |
| *Separation* | w← | | | r | | | |
| ***all remaining values*** | !w | | | r? | | | |

## 5.9 Preview

If a Manager intends that a **Preview** be used for ink zone settings, then it MUST set the JDF Node's *Type* Attribute to "*ProcessGroup*" and its *Types* Attribute to "*InkZoneCalculation ConventionalPrinting*". If a Manager links a **Preview** Resource to a pure ***ConventionalPrinting*** Process, the **Preview** is for visualization purposes only. If a Manager supplies both kinds of **Preview** resources, the corresponding PreviewLink MUST supply a CombinedProcessIndex Attribute in order to clearly distinguish between the **Preview** for ***InkZoneCalculation*** and the **Preview** for visualization purposes. The conformance rules that apply for a **Preview** for ***InkZoneCalculation*** are defined in Table 16: Preview.

**Table 16: Preview – Separation**

**Input to:** ***GB ConventionalPrinting***

| Name or Value | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *PartIDKeys* | w | | | r | | | See Section 7 "*Conformance Rules – Partitioning*" |
| *SignatureName* | w | | | r | | | |
| *SheetName* | w | | | r | | | |
| *Side* | w | | | r | | | |
| *Separation* | w | | | r | | | |
| ***all remaining values*** | !w | | | r? | | | |
| *PreviewUsage* | w | | | r | | | |
| *Separation* | w | | | r | | | |
| *Status* | w | | | r | | | |
| *Incomplete* | w | | | r | | | |

# 6 Conformance Tables – JMF Messages

This section and similar sections in [Base-ICS] and [MIS-ICS] specify conformance requirements for JMF Messages.

These Conformance Requirements for JMF Messages apply if and only if the Manager and Worker support Level 2 of this ICS and by this [Base-ICS] Level 3

**Note:** if the ***Press Controller*** (i.e. the Worker) supports the [PRECP-ICS], then it must also support the JMF Resource Command, which is based on JMF-Messages and HTTP.

**Table 17: Message – Derived Message Families**

| Message Family Name | @Type | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|---|
| | Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| Command | *RemoveQueueEntry* | | w | | | r | | See Table 18: Command – RemoveQueueEntry |
| Response | *RemoveQueueEntry* | | r | | | w | | See Table 19: Response – RemoveQueueEntry |
| Acknowledge | *RemoveQueueEntry* | | r | | | w? | | See Table 20: Acknowledge – RemoveQueueEntry |

## 6.1 Command – RemoveQueueEntry

**Table 18: Command – RemoveQueueEntry**

**Derived From:** Message

| Name or Value | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *AcknowledgeURL* | | w | | | r? | | A Worker MAY respond synchronously if it accepts queue modifications. |
| *Type* | | w | | | r | | |
| *RemoveQueueEntry* | | w | | | r | | |
| *xsi:type* | | w | | | r? | | |
| *CommandRemoveQueueEntry* | | w | | | r | | |
| QueueEntryDef | | w | | | r | | See [JDF1.2] for QueueEntryDef |
| QueueFilter | | w← | | | r | | It is highly recommended that the Manager supply this Element.<br>See [Base-ICS] for QueueFilter |

## 6.2 Response – RemoveQueueEntry

The Worker MUST return a RemoveQueueEntry Response before the HTTP connection would time out. If the Worker is unable to reorder the Queue before returning the RemoveQueueEntry Response, the Worker MUST return the Response followed by a RemoveQueueEntry Acknowledge after the Worker has reordered the Queue.

**Table 19: Response – RemoveQueueEntry**

**Derived From:** Message

| Name or Value | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *Type* | | r | | | w | | |
| *RemoveQueueEntry* | | r | | | w | | |
| *xsi:type* | | r? | | | w | | |
| *ResponseRemoveQueueEntry* | | r | | | w | | |
| Queue | | r? | | | w← | | The Worker MUST write this Element unless the Worker is sending this Element asynchronously via an Acknowledge Message instead.<br>See [Base-ICS] |

## 6.3 Acknowledge – RemoveQueueEntry

**Table 20: Acknowledge – RemoveQueueEntry**

**Derived From:** Message

| Name or Value | Manager | | | Worker | | | Description |
|---|---|---|---|---|---|---|---|
| Level ➔ | 1 | 2 | 3 | 1 | 2 | 3 | |
| *Type* | | r | | | w | | |
| *RemoveQueueEntry* | | r | | | w | | |
| *xsi:type* | | r? | | | w | | |
| *AcknowledgeRemoveQueueEntry* | | r | | | w | | |
| Queue | | r? | | | w | | See [Base-ICS] |

# 7 Conformance Rules – Partitioning

The Manager MUST use explicit partitioning with output **Component** resources and input **ExposedMedia** and **Preview** Resources for the situations described in this section.

The Manager and Worker MUST support the following partition keys for **ConventionalPrinting** and no additional ones:

- *SignatureName,*
- *SheetName,*
- *Side,*

- *Separation*,
- *Condition*.

The Manager MUST use the partition keys in the order defined above. For example, *SheetName* MUST NOT appear before *SignatureName* and *Separation* MUST NOT appear before *Side*.

Varnishing in a printing unit is defined by *Separation* = "*Varnish*".

The required depth for partitioning depends on the Resource. For example, the Manager MUST partition the input **ExposedMedia** (Plate) Resource deeper than the **Component** Resource for sheets. The **ExposedMedia** (plate) Resource is partitioned by *SignatureName*, *SheetName*, *Side* and *Separation*. By contrast, the **Component** Resource is partitioned only by *SignatureName* and *SheetName*.

The following example shows a partitioned **ExposedMedia** Resource:

```
<ExposedMedia Class="Handling" Brand="Gooey" ID="L1" Status="Available"
          PartIDKeys="SignatureName SheetName Side Separation">
   <ExposedMedia SignatureName="Sig1">
      <ExposedMedia SheetName="S1">
       <ExposedMedia Side="Front">
         <ExposedMedia Separation="Cyan" ProductID="S1FCPlateJ42"/>
         <ExposedMedia Separation="Magenta" ProductID="S1FMPlateJ42"/>
         <ExposedMedia Separation="Yellow" ProductID="S1FYPlateJ42"/>
         <ExposedMedia Separation="Black" ProductID="S1FBPlateJ42"/>
       </ExposedMedia>
      </ExposedMedia>
   </ExposedMedia>
</ExposedMedia>
```

## 7.1 "Side" Partition Key – Details

The sub-sections describe the details for the Side partition key for the values of **ConventionalPrintingParams**/@*WorkStyle*.

### 7.1.1 Perfecting

If *WorkStyle* = "*Perfecting*", a press uses two different set of plates to print the front and back sides of a sheet in one ***Press Run***.

If *WorkStyle* = "*Perfecting*":

- The Manager MUST specify partitioning for both *Front* and *Back* Sides for **ExposedMedia** and **Preview**,
- The Manager MUST partition **ExposedMedia** and **Preview** explicitly.
- The Worker MUST NOT specify *Side* partitions in JMF Status Messages, PartStatus Elements and Audit Elements if the Worker makes exactly one ***Press Run*** over all color separations.
- The Worker SHOULD cause JobPhase/@*PercentCompleted*'s value to increase from an initial value of 0% to a final value of 100% that occurs when the first and only ***Press Run*** over all color separations is completed.

### 7.1.2 Simplex

If *WorkStyle* = "*Simplex*":

- The Manager MUST supply a partition with Side = "*Front*" for **ExposedMedia** and **Preview** Resources. The Manager and Worker MUST NOT supply a partition with Side="Back".
- The Worker MUST specify a partition with Side = "*Front*" in JMF Status Messages, PartStatus Elements and Audit Elements for the ***Press Run*** over all color separations.

- The Worker SHOULD cause JobPhase/@*PercentCompleted*'s value to increase from an initial value of 0% to a final value of 100% that occurs when the ***Press Run*** over all color separations is completed.

### 7.1.3 WorkAndBack

If *WorkStyle* = "*WorkAndBack*", a press uses two different set of plates to print the front and back sides of a sheet in two ***Press Runs***.

If *WorkStyle* = "*WorkAndBack*" and the Manager wants both sides to be printed:

- The Manager MUST specify partitions for both values of *Side*s for **ExposedMedia** and **Preview** Resources.
- The Worker MUST specify exactly one partition for Side in JMF Status Messages, PartStatus Elements and Audit Elements for the first ***Press Run*** over color separations. The Worker MUST specify the other value for the Side partition in the second ***Press Run***.
- The Worker SHOULD cause JobPhase/@*PercentCompleted*'s value to increase
  - from an initial value of 0%
  - to an intermediate value of 50% that occurs when the first ***Press Run*** over all color separations is completed.
  - to a final value of 100% that occurs when the second ***Press Run*** over all color separations is completed.

If *WorkStyle* = "*WorkAndBack*" and the Manager wants one side to be printed:

- The Manager MUST specify one partition for one value of *Side* for **ExposedMedia** and **Preview** Resources.
- The Worker MUST specify exactly one partition for Side in JMF Status Messages, PartStatus Elements and Audit Elements.
- The Worker SHOULD cause JobPhase/@*PercentCompleted*'s value to increase
  - from an initial value of 0%
  - to a final value of 100% that occurs when the ***Press Run*** over all color separations is completed.

### 7.1.4 WorkAndTumble and WorkAndTurn

If *WorkStyle* ="*WorkAndTumble*" or *WorkStyle* = "*WorkAndTurn*", a press uses the same set of plates to print the front and back sides of a sheet

If *WorkStyle* ="*WorkAndTumble*" or *WorkStyle* = "*WorkAndTurn*":

- The Manager MUST specify a partition for Side = "*Front*" for **ExposedMedia** and **Preview** Resources
- The Worker MUST specify a partition for Side = "*Front*" in JMF Status Messages, PartStatus Elements and Audit Elements for the first ***Press Run*** over color separations. For the second ***Press Run*** over color separations, the Worker MUST do the same with a partition for Side = "*Back*".
- The Worker SHOULD cause JobPhase/@*PercentCompleted*'s value to increase
  - from an initial value of 0%
  - to an intermediate value of 50% that occurs when the first ***Press Run*** over all color separations is completed.
  - to a final value of 100% that occurs when the second ***Press Run*** over all color separations is completed

## 7.2 "Separation" Partition Key – Details

The number of print modules on a press and the number of separations per **Surface** of a **Sheet** influence the behavior of the *Separation* Attribute.

If all Separations on a **Surface** are printed in one ***Press Run***:

- The Worker MUST NOT specify a Separation partition in JMF Status Messages, PartStatus and Audit elements.
- The Worker should cause JobPhase/*@PercentCompleted*'s value to increase as described in chapter 7.1 "Side" Partition Key – Details.

If all Separations on a **Surface** are printed in multiple ***Press Runs***:

- The Worker MUST specify one Separation partition in JMF Status Messages, PartStatus and Audit elements for each separation in the ***Press Run***.
- The Worker SHOULD cause JobPhase/*@PercentCompleted*'s value to increase linearly according to the percentage of the entire set of ***Press Runs*** processed.

For instance, in the middle of each ***Press Run*** of a 4-color *WorkAndTumble* Job printing on a two-color press, a Status Signal would contain the following JobPhase Elements:

Run 1: Front Side, Cyan + Magenta
```
<JobPhase PercentCompleted="12.5" …>
        <Part Side="Front" Separation="Cyan"/>
        <Part Side="Front" Separation="Magenta"/>
</JobPhase>
```

Run 2: Front Side, Yellow + Black
```
<JobPhase PercentCompleted="37.5" …>
        <Part Side="Front" Separation="Yellow"/>
        <Part Side="Front" Separation="Black"/>
</JobPhase>
```

Run 3: Back Side, Yellow + Black
```
<JobPhase PercentCompleted="62.5" …>
        <Part Side="Back" Separation="Yellow"/>
        <Part Side="Back" Separation="Black"/>
</JobPhase>
```

Run 4: Front Side, Cyan + Magenta
```
<JobPhase PercentCompleted="87.5" …>
        <Part Side="Back" Separation="Cyan"/>
        <Part Side="Back" Separation="Magenta"/>
</JobPhase>
```

# 8 References

## 8.1 Normative References


[Base-ICS] Base ICS, Version 1.0, published December 2004, available at http://www.cip4.org.

[JDF1.2] Job Definition Format (JDF), Version 1.2, published May 7, 2004, available at http://www.cip4.org.

[MIS-ICS] MIS ICS, Version 1.0, published December 2004, available at http://www.cip4.org.

[MISCPS-ICS] MIS to Conventional Printing – Sheet-Fed ICS, Version 1.0, published January 2005, available at http://www.cip4.org.

[MISPRE-ICS] MIS-to-Prepress ICS, Version 1.0, published January 2005, available at http://www.cip4.org.

[PRECP-ICS] Prepress to Conventional Printing ICS, Version 1.0, published January 2005, available at http://www.cip4.org.

## 8.2 Informative References

[FileURL-AN] "CIP4 Application Note: Use of the File URL in JDF", published 12 November 2003, available at http://www.cip4.org.

[MISPRE-Ex] MISPRE examples. Available at http://www.cip4.org

[MISPRE-AN] MIS-to-Prepress Application Notes, Version 1.0, work in progress, available at http://www.cip4.org

[MIS-AN] MIS Application Notes, Version 1.0, work in progress, available at http://www.cip4.org

# 9 Acknowledgements

This ICS is a result of many discussions and a lot of experience of implementing JDF for sheet-fed printing. The authors thank the CIP4 groups, the members of the conventional printing working group, and particularly all those who spent much effort in the creation of this ICS.