



Messaging ICS

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1 Introduction

This ICS builds upon the ▶ [Base ICS]. This ICS adds communication using **JMF** messaging. **JMF** provides a command and control language that facilitates interaction between *Managers* and *Workers*.

This ICS is independent of *Domain ICSs*, meaning that it can be used in any workflow where **JMF** messaging is desired.

Using ▶ [Base ICS] terminology, this ICS specifies the generic parts of the *Manager* interface when it communicates with the *Worker*. It also specifies the corresponding generic parts of the *Worker* interface when it communicates with a *Manager*.

The title of this ICS has been changed from ‘JMF ICS’ to ‘Messaging ICS’.

This ICS defines exactly one *Conformance Level*, i.e., *Conformance Level 1*, which defines requirements for:

- Determining supported messages and submission methods
- *Device* discovery
- General queue entry handling such as requesting, aborting, holding, suspending, resuming, resubmitting, and removing queue entries
- Querying the status of queues.
- Using **JMF** messages for job submission and return

1.1 Use of ICS Documents

CIP4’s ICSs are designed for use in a particular product domain for which CIP4 supplies a domain specific ICS, e.g., ▶ [Integrated Digital Printing ICS] or ▶ [MIS to Prepress ICS].

The correct implementation of any *Domain ICS* requires a common way to present data and to communicate between systems; this is the job of the ▶ [Base ICS], this ICS (i.e. the Messaging ICS) and the ▶ [Management Information System ICS]. These ICSs are not intended to be used in isolation and should always be used in conjunction with one or more *Domain ICS* specifications.

1.2 Conventions Used in this Specification

Throughout this document a number of formatting and stylistic conventions have been employed that are intended to help the reader. These are intended to align with those of the **JDF** specification. See ▶ [JDF 1.7].

1.2.1 Document References

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

1.2.2 Text Styles

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

- **NodeInfo** A **JDF** or **JMF** element. Usually these are dynamic links leading to the definition of the element.
- **Process** A specific *Process* such as **ColorSpaceConversion** or **Rendering**. These can be dynamic links leading to the definition of the *Process*.
- **@Attribute** A **JDF** or **JMF** attribute within the context of an element.
- **"Value"** The content of an attribute.
- **JDF** **JDF** or **JMF** are used when referring to the specification in general rather than elements with the same name.
- *Glossary Item* The document utilizes some specialist terms; these are defined in ▶ Table 1.2 Glossary and highlighted throughout the document.
- ▶ [JDF 1.7] Identifies a reference to an item within this specification (such as a particular table, section etc) or to an entry in the references appendix. These are dynamic links leading to the item itself.
- <http://www.CIP4.org> A hyperlink reference to an external item.

1.2.3 XPath Notation

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

1.2.4 Specification of Cardinality

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

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

Table 1.1: Specification of Cardinality

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

1.2.5 Conformance Terminology

This document uses exactly the same terminology as the **JDF** specification to indicate the strictness of conformance. See [▶ \[JDF 1.7\]](#).

1.3 Certification

Vendors are encouraged to certify their implementations against the level as specified in [▶ Table 2.1 Conformance Levels](#). Certification against the ICS for the *Worker* role SHOULD be performed with three types of data:

- The physical printed output or an equivalent electronic representation.
- The **JMF** messages or returned **JDF** file.
- Operator interface on the device.

Additional hints for self certification are provided in the descriptions and are marked with the label "**Conformance Test:**".

1.4 Changes from Version 1.5

This version of the Messaging ICS represents a significant revision from earlier **JMF** ICS versions. In part this is cosmetic to align the document with the latest CIP4 document standards; in part it is organizational to align the structure with all other ICS documents that have also been revised in this cycle.

In addition to the above there have also been a number of changes made to improve the usefulness of this ICS.

1.4.1 Additions

- **@ReturnCode** is required to be explicitly specified in all **Response** messages rather than relying on the schema default value of "0".
- **@SubmissionTime** is required in all **QueueEntry** instances.
- **@DeviceClass** is required in **Device** instances.
- **@JobID** and **@JobPartID** are required in **QueueEntry** instances in the **SubmitQueueEntry Response** message.

1.4.2 Removals

- **Conformance Requirements** for the use of **@AcknowledgeURL** and **Acknowledge** messages have been removed. **Note:** This is not to say that their use has been precluded, rather the ICS remains silent and their use or not is implementation dependent.
- **Conformance Requirements** for the use of device and detailed job status, including the use of signals and subscriptions, have been removed. **Note:** These requirements have been moved to the ▶ [Management Information System ICS].
- **Conformance Requirements** for the use of XML specific traits, e.g., **@xmlns**, have been removed from this and all other **JDF 1.7** ICSs. In particular, **@xsi:type** is no longer required in any **JMF** message.
- **Conformance Requirements** for the support of **ResourcePull** messages have been removed.

1.4.3 Modifications

- **Conformance Requirements** for **Managers** and **Workers** are separately specified rather than being symmetrical for all messages.
- **Conformance Requirements** for **Response** messages to optional **Command** and **Query** messages are explicitly specified.
- **Conformance Requirements** for **QueueFilter** have been increased and it is now required that it is specified in all messages that modify a queue entry, e.g., **AbortQueueEntry** and **ResumeQueueEntry**.
- **Conformance Requirements** for the use of empty **QueueFilter** elements have been clarified.
- **Conformance Requirements** for **@Priority** in **SubmitQueueEntry** and **SetQueueEntryPriority** messages have been unlinked and are no longer interdependent.
- **Conformance Requirements** for reading **SubmissionMethods** have been increased.
- **Managers** and **Workers** MAY disable insecure messaging.
- **Conformance Requirements** for supporting **ResumeQueueEntry** are not linked to the **Conformance Requirements** for support of **QueueSubmissionParams/@Hold**.
- **Conformance Requirements** for supporting **ResumeQueueEntry** are linked to the **Conformance Requirements** for support of **SuspendQueueEntry**.

1.5 Glossary

This section defines terminology used throughout this document. References to other documents are indicated with square brackets, e.g. ▶ [JDF 1.7].

Table 1.2: Glossary (Sheet 1 of 2)

TERM	DEFINITION
Conformance Level	See ▶ [Base ICS].
Conformance Requirement	See ▶ [Base ICS].
Consumer	See ▶ [Base ICS].
Device	See ▶ [JDF 1.7].
Domain ICS	See ▶ [Base ICS].

Table 1.2: Glossary (Sheet 2 of 2)

TERM	DEFINITION
Hot Folder	See ▶ [Base ICS].
JDF	See ▶ [JDF 1.7].
JMF	See ▶ [JDF 1.7].
Manager	See ▶ [Base ICS].
Node	See ▶ [JDF 1.7].
Partition	See ▶ [JDF 1.7].
Persistent Channel	A <i>Persistent Channel</i> is a mechanism to exchange messages between <i>Managers</i> and <i>Workers</i> whose lifetime is managed and is guaranteed to be available until explicitly closed by either the <i>Manager</i> or <i>Worker</i> .
Process	See ▶ [JDF 1.7].
Producer	See ▶ [Base ICS].
Trait	See ▶ [Base ICS].
Worker	See ▶ [Base ICS].

2 Conformance

2.1 Conformance Levels

This ICS specifies exactly one *Conformance Level*, namely Level 1 which is a subset of ▶ [JDF 1.7].

A product conforming to this ICS SHALL produce or consume **JMF** instances that conform to the ▶ [JDF 1.7] specification. In order to be conformant to Level 1 of this ICS as specified in the first column of ▶ Table 2.1 Conformance Levels, a *Manager* SHALL conform to the *Manager* part and a *Worker* conform to the *Worker* part of this ICS and the ICSs and levels specified by the other ICSs in ▶ Table 2.1 Conformance Levels below.

- See ▶ [Base ICS].

Table 2.1: Conformance Levels

LEVEL OF THIS ICS	LEVEL OF BASE ICS	DESCRIPTION
1	2	There is only one <i>Conformance Level</i> for this ICS.

2.2 Job Submission

2.2.1 Use of JMF SubmitQueueEntry and ReturnQueueEntry

A **JDF** job submission via the **SubmitQueueEntry Command** SHALL result in a single **QueueEntry** being created by the *Worker*, and the *Worker* SHALL send at least one **ReturnQueueEntry** message when the **QueueEntry** is completed or aborted. The *Worker* MAY send multiple **ReturnQueueEntry** messages.

When a *Worker* determines that further work needs to be done on a completed **QueueEntry**, the *Worker* SHALL set the **QueueEntry/@Status** to "Waiting" or "Running", and SHALL send any signals associated with this change of status.

The *Manager* SHALL support receiving multiple **ReturnQueueEntry** messages related to the same **QueueEntry** from the *Worker*. If the *Manager* needs to prevent the *Worker* from sending further **ReturnQueueEntry** messages related to the same **QueueEntry**, the *Manager* SHALL send a **RemoveQueueEntry** to remove the related **QueueEntry**.

If a *Manager* uses the **RemoveQueueEntry Command** to remove a **QueueEntry** while in the "Waiting" or "Held" state, the *Worker* need not send a **ReturnQueueEntry** message.

If a *Manager* uses the **RemoveQueueEntry Command** to remove a **QueueEntry** while in the "Completed" or "Aborted" state, the *Worker* SHALL not send further **ReturnQueueEntry** messages. This ICS enforces a restriction of a single **SubmitQueueEntry Command** per **JMF** message. A **JMF** element containing a **SubmitQueueEntry Command** SHALL contain one and only one **SubmitQueueEntry Command** message.

2.2.2 URL External Reference vs MIME Encoded

When a *Manager* submits a **JDF** instance via a **JMF SubmitQueueEntry Command** message, the *Manager* SHALL use one of these options:

- The **JDF** instance and the **JMF** message are packaged together using MIME. The **JMF** message SHALL be the first part of the MIME package, and SHALL use a URL with the "cid" scheme to reference the **JDF** part of the MIME package.
Note: Further URL references, e.g. PDL content or preview images NEED NOT be in the "cid" scheme.
- The **JDF** instance is separate from the **JMF** message. The **JMF** message SHALL specify a URL that references the **JDF** instance.

MIME packaging is the recommended option; to be conformant to this ICS, *Managers* and *Workers* SHALL support both of the above options.

3 Messages

This ICS specifies the **JMF** messages that are common to all areas where **JMF** is used.

3.1 Message Types

The following table specifies the *Conformance Requirements* for message types that *Managers* and *Workers* SHALL support. The specific details of *Conformance Requirements* for each message type is described later in this chapter. *Managers* and *Workers* MAY support other message types, if so they SHALL conform to the *Conformance Requirements* of those message types.

Table 3.1: JMF Message Types (Sheet 1 of 2)

MESSAGE TYPE	MESSAGE FAMILY	MANAGER	WORKER	DESCRIPTION
AbortQueueEntry	Command	w	r	See ▶ [JDF 1.7].
	Response	r	w	
HoldQueueEntry	Command	w?	r?	<p>If the <i>Manager</i> supports HoldQueueEntry it SHALL support reading the Response from the <i>Worker</i>.</p> <p>If the <i>Worker</i> supports HoldQueueEntry it SHALL support sending the Response to the <i>Manager</i>.</p> <p>If a <i>Worker</i> supports HoldQueueEntry it SHALL support ResumeQueueEntry.</p>
	Response	r←	w←	
KnownDevices	Query	w	r	See ▶ [JDF 1.7].
	Response	r	w	
KnownMessages	Query	w r	r w?	<p><i>Workers</i> SHOULD support querying for known messages.</p> <p>If the <i>Worker</i> supports querying for KnownMessages it SHALL support reading the Response from the <i>Manager</i>.</p>
	Response	r w	w r←	
QueueStatus	Query	w?	r?	<p>If the <i>Manager</i> supports QueueStatus it SHALL support reading the Response from the <i>Worker</i>.</p> <p>If the <i>Worker</i> supports QueueStatus it SHALL support sending the Response to the <i>Manager</i>.</p>
	Response	r←	w←	
RemoveQueueEntry	Command	w	r	See ▶ [JDF 1.7].
	Response	r	w	
RequestQueueEntry	Command	r?	w?	<p>If the <i>Worker</i> supports RequestQueueEntry it SHALL support reading the Response from the <i>Manager</i>.</p> <p>If the <i>Manager</i> supports RequestQueueEntry it SHALL support sending the Response to the <i>Worker</i>.</p>
	Response	w←	r←	
ResubmitQueueEntry	Command	w?	r?	<p>If the <i>Manager</i> supports ResubmitQueueEntry it SHALL support reading the Response from the <i>Worker</i>.</p> <p>If the <i>Worker</i> supports ResubmitQueueEntry it SHALL support sending the Response to the <i>Manager</i>.</p>
	Response	r←	w←	

Table 3.1: JMF Message Types (Sheet 2 of 2)

MESSAGE TYPE	MESSAGE FAMILY	MANAGER	WORKER	DESCRIPTION
ResumeQueueEntry	Command	w?	r←	<p>If the <i>Manager</i> supports ResumeQueueEntry it SHALL support reading the Response from the <i>Worker</i>.</p> <p>If the <i>Worker</i> supports ResumeQueueEntry it SHALL support sending the Response to the <i>Manager</i>.</p> <p>If a <i>Worker</i> supports HoldQueueEntry or SuspendQueueEntry it SHALL support ResumeQueueEntry.</p>
	Response	r←	w←	
ReturnQueueEntry	Command	r	w	See ▶ [JDF 1.7].
	Response	w	r	
SetQueueEntryPosition	Command	w?	r?	<p>If the <i>Manager</i> supports SetQueueEntryPosition it SHALL support reading the Response from the <i>Worker</i>.</p> <p>If the <i>Worker</i> supports SetQueueEntryPosition it SHALL support sending the Response to the <i>Manager</i>.</p>
	Response	r←	w←	
SetQueueEntryPriority	Command	w?	r?	<p>If the <i>Manager</i> supports SetQueueEntryPriority it SHALL support reading the Response from the <i>Worker</i>.</p> <p>If the <i>Worker</i> supports SetQueueEntryPriority it SHALL support sending the Response to the <i>Manager</i>.</p>
	Response	r←	w←	
SubmissionMethods	Query	w? r	r w?	<p>If the <i>Manager</i> supports requesting SubmissionMethods it SHALL support reading the Response from the <i>Worker</i>.</p> <p>If the <i>Worker</i> supports requesting SubmissionMethods it SHALL support reading the Response from the <i>Manager</i>.</p>
	Response	r← w	w r←	
SubmitQueueEntry	Command	w	r	See ▶ [JDF 1.7].
	Response	r	w	
SuspendQueueEntry	Command	w?	r?	<p>If the <i>Manager</i> supports SuspendQueueEntry it SHALL support reading the Response from the <i>Worker</i>.</p> <p>If the <i>Worker</i> supports SuspendQueueEntry it SHALL support sending the Response to the <i>Manager</i>.</p> <p>If a <i>Worker</i> supports SuspendQueueEntry it SHALL support ResumeQueueEntry.</p>
	Response	r←	w←	

3.2 JMF

This ICS describes both the **JMF** message formats and the transfer protocol. *Managers* and *Workers* SHALL be able to use the http protocol, and MAY use the https protocol, for sending and receiving messages. It is strongly encouraged to implement https to enable authentication and encryption when using **JMF** messages in an insecure or open environment. *Managers* and *Workers* MAY disable http support if they support https, e.g., if a client installation requires https for all network communication.

The following table contains the *Conformance Requirements* for the **JMF** element that is the root *Node* of any **JMF** message.

Table 3.2: JMF Instance

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>DeviceID</i>	w? r	r w?	The value identifies the intended recipient of the message. If the message is being sent to a <i>Device</i> , then this attribute indicates that <i>Device</i> 's <i>@DeviceID</i> . Conformance Test: If the immediate <i>Consumer</i> or any subsequent recipient does not recognize the value of <i>@DeviceID</i> , it SHALL reject the message with <i>@ReturnCode</i> = "121", "Unknown <i>@DeviceID</i> ".
<i>ICSVersions</i>	w r?	r? w	The <i>Manager</i> SHALL supply a set of NMTOKEN values, one for each ICS with which the JMF instance complies.
JMF_L1-1.7	w r?	r? w	Specifies conformance to the Messaging ICS <i>Conformance Level 1</i> .
<all other values>	w? r?	r? w?	<i>@ICSVersions</i> MAY contain the values specified in other ICS documents that require conformance to this ICS.
<i>MaxVersion</i>	w r?	r? w	See ▶ [JDF 1.7]. Conformance Test: The returned JMF contains no elements or attributes from newer versions of JMF than the specified version.
1.0 ... 1.6	w!	w!	Values lower than "1.7" SHALL NOT be specified.
1.7	w← r?	r? w←	A value of "1.7" SHOULD be specified for conformance to this ICS.
1.8 ... 1.n	w← r?	r? w←	Higher values, i.e., "1.8", "1.9" etc that define a higher version of JMF MAY be specified.
<i>ResponseURL</i>	w!	w!	See ▶ [JDF 1.7].
<i>SenderID</i>	w r?	r? w	See ▶ [JDF 1.7].
<i>TimeStamp</i>	w r?	r? w	See ▶ [JDF 1.7].
<i>Version</i>	w r?	r? w	See ▶ [JDF 1.7].
1.7	w r?	r? w	

3.3 AbortQueueEntry

3.3.1 Command

Table 3.3: AbortQueueEntry Command Message (Sheet 1 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	w	r	<i>@ID</i> SHALL be unique for all messages initiated by the same sender. The <i>Response</i> message SHALL provide a copy of this <i>@ID</i> in <i>@refID</i> .
<i>Type</i>	w	r	See ▶ [JDF 1.7].

Table 3.3: AbortQueueEntry Command Message (Sheet 2 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
AbortQueueEntry	w	r	
AbortQueueEntryParams	w	r	See ▶ [JDF 1.7].

3.3.1.1 AbortQueueEntryParams

Table 3.4: AbortQueueEntryParams Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
EndStatus	w	r	See ▶ [JDF 1.7].
QueueFilter	w	r	<p>QueueFilter SHALL be specified to select queue entry items.</p> <p>QueueFilter SHOULD specify QueueEntryDef elements to select one or more queue entry items. The <i>Manager</i> MAY use the other <i>Traits</i> of QueueFilter.</p> <p>If QueueFilter is empty, then the <i>Worker</i> NEED NOT abort any queue entry items; the resulting behavior is implementation dependent.</p> <p>Note: This behavior allows implementations to ensure that defective requests do not have far reaching unintended consequences.</p>

3.3.2 Response

Table 3.5: AbortQueueEntry Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	r?	w	@ID SHALL be unique for all messages initiated by the same sender.
refID	r	w	See ▶ [JDF 1.7].
ReturnCode	r	w	See ▶ [JDF 1.7].
Type	r	w	See ▶ [JDF 1.7].
AbortQueueEntry	r	w	

3.4 HoldQueueEntry

3.4.1 Command

Table 3.6: HoldQueueEntry Command Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	w	r	@ID SHALL be unique for all messages initiated by the same sender. The Response message SHALL provide a copy of this @ID in @refID.
Type	w	r	See ▶ [JDF 1.7].
HoldQueueEntry	w	r	
HoldQueueEntryParams	w	r	See ▶ [JDF 1.7].

3.4.1.1 HoldQueueEntryParams

Table 3.7: HoldQueueEntryParams Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>QueueFilter</i>	w	r	<p><i>QueueFilter</i> SHALL be specified to select queue entry items.</p> <p><i>QueueFilter</i> SHOULD specify <i>QueueEntryDef</i> elements to select one or more queue entry items. The <i>Manager</i> MAY use the other <i>Traits</i> of <i>QueueFilter</i>.</p> <p>If <i>QueueFilter</i> is empty, then the <i>Worker</i> NEED NOT hold any queue entry items; the resulting behavior is implementation dependent.</p> <p>Note: This behavior allows implementations to ensure that defective requests do not have far reaching unintended consequences.</p>

3.4.2 Response

Table 3.8: HoldQueueEntry Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	r?	w	@ <i>ID</i> SHALL be unique for all messages initiated by the same sender.
<i>refID</i>	r	w	See ▶ [JDF 1.7].
<i>ReturnCode</i>	r	w	See ▶ [JDF 1.7].
<i>Type</i>	r	w	See ▶ [JDF 1.7].
HoldQueueEntry	r	w	

3.5 KnownDevices

KnownDevices provides a method for *Managers* to query *Workers* for a list of *Devices* that can communicate using **JMF**.

3.5.1 Query

Table 3.9: KnownDevices Query Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	w	r	@ <i>ID</i> SHALL be unique for all messages initiated by the <i>Manager</i> .
<i>Type</i>	w	r	See ▶ [JDF 1.7].
KnownDevices	w	r	
<i>DeviceFilter</i>	w	r	See ▶ [JDF 1.7].

3.5.1.1 DeviceFilter

Table 3.10: DeviceFilter Element (Sheet 1 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>DeviceDetails</i>	w	r	<p>Conformance Test:</p> <p>The information in the <i>Response</i> contains the information corresponding to the value of @<i>DeviceDetails</i>.</p>

Table 3.10: DeviceFilter Element (Sheet 2 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
Brief	w←	r	Conformance Test: The <i>Response</i> SHALL specify only <i>DeviceInfo</i> / <i>@DeviceID</i> and <i>DeviceInfo</i> / <i>@DeviceStatus</i> , and SHALL NOT specify <i>DeviceInfo</i> / <i>Device</i> .
Details	w←	r	Conformance Test: The <i>Response</i> SHALL specify <i>DeviceInfo</i> / <i>Device</i> .
None	w←	r	Conformance Test: The <i>Response</i> SHALL specify only <i>DeviceInfo</i> / <i>@DeviceID</i> and <i>DeviceInfo</i> / <i>@DeviceStatus</i> .

3.5.2 Response

Table 3.11: KnownDevices Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	r?	w	<i>@ID</i> SHALL be unique for all messages initiated by the same sender.
<i>refID</i>	r	w	The <i>Worker</i> SHALL specify <i>@refID</i> with a copy of the value from <i>KnownDevices/Query</i> / <i>@ID</i> .
<i>ReturnCode</i>	r	w	See ▶ [JDF 1.7].
<i>Type</i>	r	w	See ▶ [JDF 1.7].
KnownDevices	r	w	
<i>DeviceList</i>	r	w	See ▶ [JDF 1.7].

3.5.2.1 DeviceList

Table 3.12: DeviceList Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>DeviceInfo</i>	r	w	The <i>Worker</i> MAY return multiple <i>DeviceInfo</i> elements, and SHALL return exactly one <i>DeviceInfo</i> element where <i>@DeviceID</i> matches <i>JMF</i> / <i>@SenderID</i> for the <i>KnownDevices Response</i> .

3.5.2.2 DeviceInfo

Table 3.13: DeviceInfo Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>DeviceID</i>	r?	w	See ▶ [JDF 1.7].
<i>DeviceStatus</i>	r?	w	See ▶ [JDF 1.7].
<i>Device</i>	r?	w←	If the <i>KnownDevices Query</i> contained <i>DeviceFilter</i> / <i>@DeviceDetails</i> = "Details", the <i>Worker</i> SHALL return a <i>Device</i> .

3.5.2.3 Device

Table 3.14: Device Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>DescriptiveName</i>	r?	w	See ▶ [JDF 1.7].
<i>DeviceClass</i>	r?	w	See ▶ [JDF 1.7].
<i>DeviceID</i>	r?	w	See ▶ [JDF 1.7].
<i>JDFVersions</i>	r?	w	See ▶ [JDF 1.7].
<i>JMFSenderId</i>	r?	w	See ▶ [JDF 1.7].
<i>JMFURL</i>	r?	w←	If the <i>Device</i> supports direct communication through JMF , it SHALL specify @ <i>JMFURL</i> .
http:...	r	w←	Both <i>Manager</i> and <i>Worker</i> SHALL support this protocol.
https:...	r?	w←	Both <i>Manager</i> and <i>Worker</i> SHOULD support this protocol.
<all other values>		w!	

3.6 KnownMessages

The **KnownMessages Query** is the recommended way to “ping” another *Device*, even if you aren’t really interested in the contents of the **Response**; it is a good way to check if configuration is correct.

KnownMessages MAY be initiated by either *Manager* or *Worker*.

3.6.1 Query

Table 3.15: KnownMessages Query Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	w r	r w	@ <i>ID</i> SHALL be unique for all messages initiated by the same sender. Any Response message SHALL provide a copy of this @ <i>ID</i> in @ <i>refID</i> .
<i>Type</i>	w r	r w	See ▶ [JDF 1.7].
KnownMessages	w r	r w	
KnownMsgQuParams	w r	r w	See ▶ [JDF 1.7].

3.6.1.1 KnownMsgQuParams

Table 3.16: KnownMsgQuParams Element (Sheet 1 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ChannelMode</i>	w? r	r w?	If @ <i>ChannelMode</i> is omitted, the <i>Consumer</i> SHALL respond with the values that are supported.
FireAndForget	w← r	r w←	Conformance Test: The Response SHALL include ‘fire and forget’ signals, if any.
Reliable	w← r	r w←	Conformance Test: The Response SHALL include ‘reliable’ signals, if any.

Table 3.16: KnownMsgQuParams Element (Sheet 2 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>Exact</i>	w? r	r w?	See ▶ [JDF 1.7].
false	w← r	r w←	The Response SHALL NOT contain any MessageService elements that contain any of the ActionPool , DevCapPool , DevCaps , ModulePool , State or TestPool subelements.
true	w← r?	r? w←	Implementing capabilities in KnownMessages is optional.
<i>ListCommands</i>	w? r	r w?	Conformance Test: If @ListCommands = "true" , the Response SHALL include all supported commands.
<i>ListQueries</i>	w? r	r w?	Conformance Test: If @ListQueries = "true" , the Response SHALL include all supported queries.
<i>ListRegistrations</i>	w? r	r w?	Conformance Test: If @ListRegistrations = "true" , the Response SHALL include all supported registrations.
<i>ListSignals</i>	w? r	r w?	Conformance Test: If @ListSignals = "true" , the Response SHALL include all supported signals.
<i>Persistent</i>	w? r	r w?	Conformance Test: If @Persistent = "true" , the Response SHALL include only those messages that can use <i>Persistent Channels</i> .

3.6.2 Response

Note: The *Producer* in the following **Response** table is returning the response to the *Consumer*. The **Query Producer** is the **Response Consumer**, and the **Response Producer** is the **Query Consumer**.

Table 3.17: KnownMessages Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	r? w	w r?	@ID SHALL be unique for all messages initiated by the same sender.
<i>refID</i>	r w	w r	See ▶ [JDF 1.7].
<i>ReturnCode</i>	r w	w r	See ▶ [JDF 1.7].
<i>Type</i>	r w	w r	See ▶ [JDF 1.7].
KnownMessages	r w	w r	
MessageService	r w	w r	See ▶ [JDF 1.7].

3.6.2.1 MessageService

Table 3.18: MessageService Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>Acknowledge</i>	r? w	w r?	See ▶ [JDF 1.7].
<i>ChannelMode</i>	r? w	w r?	See ▶ [JDF 1.7].
<i>Command</i>	r? w	w r?	See ▶ [JDF 1.7].
<i>JMFRole</i>	r? w	w r?	See ▶ [JDF 1.7].
<i>Persistent</i>	r? w	w r?	See ▶ [JDF 1.7].
<i>Query</i>	r? w	w r?	See ▶ [JDF 1.7].
<i>Registration</i>	r? w	w r?	See ▶ [JDF 1.7].
<i>Signal</i>	r? w	w r?	See ▶ [JDF 1.7].
<i>Type</i>	r? w	w r?	See ▶ [JDF 1.7].
<i>URLSchemes</i>	r? w	w r?	See ▶ [JDF 1.7].
http	r w←	w← r	Both <i>Manager</i> and <i>Worker</i> SHALL support this protocol.
https	r? w←	w← r?	Both <i>Manager</i> and <i>Worker</i> SHOULD support this protocol.
<all other values>	w!	w!	

3.7 QueueStatus

3.7.1 Query

Table 3.19: QueueStatus Query Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	w	r	@ <i>ID</i> SHALL be unique for all messages initiated by the same sender. Any Response message SHALL provide a copy of this @ <i>ID</i> in @ <i>refID</i> .
<i>Type</i>	w	r	See ▶ [JDF 1.7].
QueueStatus	w	r	
<i>QueueFilter</i>	w	r	See ▶ [JDF 1.7].

3.7.1.1 QueueFilter

Table 3.20: QueueFilter Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>MaxEntries</i>	w?	r	Conformance Test: The Response to the message contains no more Queue/QueueEntry elements than the value of @MaxEntries .
<i>QueueEntryDetails</i>	w	r	Conformance Test: The QueueEntry elements in the Queue element of the Response each contain the information corresponding to the value of @QueueEntryDetails .
Brief	w←	r	
None	w←	r	
<all other values>	w!		

3.7.2 Response

Table 3.21: QueueStatus Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	r?	w	@ID SHALL be unique for all messages initiated by the same sender.
<i>refID</i>	r	w	See ▶ [JDF 1.7].
<i>ReturnCode</i>	r	w	See ▶ [JDF 1.7].
<i>Type</i>	r	w	See ▶ [JDF 1.7].
QueueStatus	r	w	
Queue	r	w	See ▶ [JDF 1.7].

3.7.2.1 Queue

Table 3.22: Queue Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>DeviceID</i>	r?	w	See ▶ [JDF 1.7].
<i>Status</i>	r?	w	See ▶ [JDF 1.7].
QueueEntry	r?	w←	The Worker SHALL specify a QueueEntry for each of its queue entries that match the QueueFilter in the QueueStatus query.

3.8 RemoveQueueEntry

3.8.1 Command

Table 3.23: RemoveQueueEntry Command Message (Sheet 1 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	w	r	@ID SHALL be unique for all messages initiated by the same sender. The Response message SHALL provide a copy of this @ID in @refID .

Table 3.23: RemoveQueueEntry Command Message (Sheet 2 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
Type	w	r	See ▶ [JDF 1.7].
RemoveQueueEntry	w	r	
RemoveQueueEntryParams	w	r	See ▶ [JDF 1.7].

3.8.1.1 RemoveQueueEntryParams

Table 3.24: RemoveQueueEntryParams Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
QueueFilter	w	r	<p>QueueFilter SHALL be specified to select queue entry items.</p> <p>QueueFilter SHOULD specify QueueEntryDef elements to select one or more queue entry items. The <i>Manager</i> MAY use the other <i>Traits</i> of QueueFilter.</p> <p>If QueueFilter is empty, then the <i>Worker</i> NEED NOT remove any queue entry items; the resulting behavior is implementation dependent.</p> <p>Note: This behavior allows implementations to ensure that defective requests do not have far reaching unintended consequences.</p>

3.8.2 Response

Table 3.25: RemoveQueueEntry Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	r?	w	@ID SHALL be unique for all messages initiated by the same sender.
refID	r	w	See ▶ [JDF 1.7].
ReturnCode	r	w	See ▶ [JDF 1.7].
Type	r	w	See ▶ [JDF 1.7].
RemoveQueueEntry	r	w	

3.9 RequestQueueEntry

3.9.1 Command

Table 3.26: RequestQueueEntry Command Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	r	w	@ID SHALL be unique for all messages initiated by the same sender. The Response message SHALL provide a copy of this @ID in @refID.
Type	r	w	See ▶ [JDF 1.7].
RequestQueueEntry	r	w	
RequestQueueEntryParams	r	w	See ▶ [JDF 1.7].

3.9.1.1 RequestQueueEntryParams

Table 3.27: RequestQueueEntryParams Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>JobID</i>	r	w	Conformance Test: If the response to the <i>RequestQueueEntry</i> specifies <i>@ReturnCode "0"</i> , the <i>Manager</i> SHALL initiate a <i>SubmitQueueEntry</i> message for the job specified by <i>@JobID</i> .
<i>JobPartID</i>	r	w?	Conformance Test: If the response to the <i>RequestQueueEntry</i> specifies <i>@ReturnCode "0"</i> , the <i>Manager</i> SHALL initiate a <i>SubmitQueueEntry</i> message for the job part specified by <i>@JobPartID</i> .
<i>QueueURL</i>	r	w	Conformance Test: If the response to the <i>RequestQueueEntry</i> specifies <i>@ReturnCode "0"</i> , the <i>Manager</i> SHALL initiate a <i>SubmitQueueEntry</i> message to the URL specified by <i>@QueueURL</i> .
http:...	r	w←	Both <i>Manager</i> and <i>Worker</i> SHALL support this protocol.
https:...	r?	w←	Both <i>Manager</i> and <i>Worker</i> SHOULD support this protocol.
<all other values>		w!	
<i>Part</i>	r	w?	Conformance Test: If the response to the <i>RequestQueueEntry</i> specifies <i>@ReturnCode "0"</i> , the <i>Manager</i> SHALL initiate a <i>SubmitQueueEntry</i> message for the <i>Partition</i> identified by the <i>Part</i> element.

3.9.2 Response

Table 3.28: RequestQueueEntry Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	w	r?	<i>@ID</i> SHALL be unique for all messages initiated by the same sender.
<i>refID</i>	w	r	See ▶ [JDF 1.7].
<i>ReturnCode</i>	w	r	See ▶ [JDF 1.7].
<i>Type</i>	w	r	See ▶ [JDF 1.7].
<i>RequestQueueEntry</i>	w	r	

3.10 ResubmitQueueEntry

3.10.1 Command

Table 3.29: ResubmitQueueEntry Command Message (Sheet 1 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	w	r	<i>@ID</i> SHALL be unique for all messages initiated by the same sender. The <i>Response</i> message SHALL provide a copy of this <i>@ID</i> in <i>@refID</i> .
<i>Type</i>	w	r	See ▶ [JDF 1.7].

Table 3.29: ResubmitQueueEntry Command Message (Sheet 2 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ResubmitQueueEntry	w	r	
ResubmissionParams	w	r	See ▶ [JDF 1.7].

3.10.1.1 ResubmissionParams

Table 3.30: ResubmissionParams Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
QueueEntryID	w	r	Conformance Test: The queue entry identified by @QueueEntryID (and no other) is updated.
URL	w	r	Conformance Test: The queue entry is updated based on the referenced JDF instance.
http:...	w←	r	Both Manager and Worker SHALL support this protocol.
https:...	w←	r?	Both Manager and Worker SHOULD support this protocol.
<all other values>	w!		

3.10.2 Response

Table 3.31: ResubmitQueueEntry Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	r?	w	@ID SHALL be unique for all messages initiated by the same sender.
refID	r	w	See ▶ [JDF 1.7].
ReturnCode	r	w	See ▶ [JDF 1.7].
Type	r	w	See ▶ [JDF 1.7].
ResubmitQueueEntry	r	w	

3.11 ResumeQueueEntry

3.11.1 Command

Table 3.32: ResumeQueueEntry Command Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	w	r	@ID SHALL be unique for all messages initiated by the same sender. The Response message SHALL provide a copy of this @ID in @refID.
Type	w	r	See ▶ [JDF 1.7].
ResumeQueueEntry	w	r	
ResumeQueueEntryParams	w	r	See ▶ [JDF 1.7].

3.11.1.1 ResumeQueueEntryParams

Table 3.33: ResumeQueueEntryParams Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>QueueFilter</i>	w	r	<p><i>QueueFilter</i> SHALL be specified to select queue entry items.</p> <p><i>QueueFilter</i> SHOULD specify <i>QueueEntryDef</i> elements to select one or more queue entry items. The <i>Manager</i> MAY use the other <i>Traits</i> of <i>QueueFilter</i>.</p> <p>If <i>QueueFilter</i> is empty, then the <i>Worker</i> NEED NOT resume any queue entry items; the resulting behavior is implementation dependent.</p> <p>Note: This behavior allows implementations to ensure that defective requests do not have far reaching unintended consequences.</p>

3.11.2 Response

Table 3.34: ResumeQueueEntry Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	r?	w	@ <i>ID</i> SHALL be unique for all messages initiated by the same sender.
<i>refID</i>	r	w	See ▶ [JDF 1.7].
<i>ReturnCode</i>	r	w	See ▶ [JDF 1.7].
<i>Type</i>	r	w	See ▶ [JDF 1.7].
ResumeQueueEntry	r	w	

3.12 ReturnQueueEntry

3.12.1 Command

Table 3.35: ReturnQueueEntry Command Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	r	w	@ <i>ID</i> SHALL be unique for all messages initiated by the same sender. The <i>Response</i> message SHALL provide a copy of this @ <i>ID</i> in @ <i>refID</i> .
<i>Type</i>	r	w	See ▶ [JDF 1.7].
ReturnQueueEntry	r	w	
<i>ReturnQueueEntryParams</i>	r	w	See ▶ [JDF 1.7].

3.12.1.1 ReturnQueueEntryParams

Table 3.36: ReturnQueueEntryParams Element (Sheet 1 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>Aborted</i>	r?	w←	@ <i>Aborted</i> SHALL contain the @ <i>ID</i> value of all JDF Nodes that were aborted.
<i>Completed</i>	r?	w←	@ <i>Completed</i> SHALL contain the @ <i>ID</i> value of all JDF Nodes that were executed and completed.

Table 3.36: ReturnQueueEntryParams Element (Sheet 2 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
QueueEntryID	r?	w	See ▶ [JDF 1.7].
URL	r	w	References the JDF instance.
cid:...	r	w	A URL whose scheme is "cid:".

3.12.2 Response

Table 3.37: ReturnQueueEntry Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	w	r?	@ID SHALL be unique for all messages initiated by the same sender.
refID	w	r	See ▶ [JDF 1.7].
ReturnCode	w	r	See ▶ [JDF 1.7].
Type	w	r	See ▶ [JDF 1.7].
ReturnQueueEntry	w	r	

3.13 SetQueueEntryPosition

3.13.1 Command

Table 3.38: SetQueueEntryPosition Command Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	w	r	@ID SHALL be unique for all messages initiated by the same sender. The Response message SHALL provide a copy of this @ID in @refID.
Type	w	r	See ▶ [JDF 1.7].
SetQueueEntryPosition	w	r	
QueueEntryPosParams	w	r	See ▶ [JDF 1.7].

3.13.1.1 QueueEntryPosParams

Table 3.39: QueueEntryPosParams Element (Sheet 1 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
NextQueueEntryID	w←	r	Exactly one of @NextQueueEntryID, @PrevQueueEntryID, or @Position SHALL be specified. Conformance Test: The queue entry identified by @QueueEntryID is positioned immediately prior to the queue entry identified by @NextQueueEntryID.
Position	w←	r	Exactly one of @NextQueueEntryID, @PrevQueueEntryID, or @Position SHALL be specified. Conformance Test: The queue entry identified by @QueueEntryID is positioned in the Queue at the position specified by @Position. Note: Zero based indexing is used - i.e., the first queue entry is in position 0.

Table 3.39: QueueEntryPosParams Element (Sheet 2 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>PrevQueueEntryID</i>	w←	r	Exactly one of <i>@NextQueueEntryID</i> , <i>@PrevQueueEntryID</i> , or <i>@Position</i> SHALL be specified. Conformance Test: The queue entry identified by <i>@QueueEntryID</i> is positioned immediately after the queue entry identified by <i>@PrevQueueEntryID</i> .
<i>QueueEntryID</i>	w	r	Conformance Test: The queue entry identified by <i>@QueueEntryID</i> is positioned in accordance with the value of <i>@NextQueueEntryID</i> , <i>@PrevQueueEntryID</i> , or <i>@Position</i> .

3.13.2 Response

Table 3.40: SetQueueEntryPosition Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	r?	w	<i>@ID</i> SHALL be unique for all messages initiated by the same sender.
<i>refID</i>	r	w	See ▶ [JDF 1.7].
<i>ReturnCode</i>	r	w	See ▶ [JDF 1.7].
<i>Type</i>	r	w	See ▶ [JDF 1.7].
SetQueueEntryPosition	r	w	

3.14 SetQueueEntryPriority

3.14.1 Command

Table 3.41: SetQueueEntryPriority Command Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	w	r	<i>@ID</i> SHALL be unique for all messages initiated by the same sender. The Response message SHALL provide a copy of this <i>@ID</i> in <i>@refID</i> .
<i>Type</i>	w	r	See ▶ [JDF 1.7].
SetQueueEntryPriority	w	r	
<i>QueueEntryPriParams</i>	w	r	See ▶ [JDF 1.7].

3.14.1.1 QueueEntryPriParams

Table 3.42: QueueEntryPriParams Element (Sheet 1 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>Priority</i>	w	r	Conformance Test: The queue entry identified by <i>@QueueEntryID</i> in the queue has the priority indicated.

Table 3.42: QueueEntryPriParams Element (Sheet 2 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
QueueFilter	w	r	<p>QueueFilter SHALL be specified to select queue entry items.</p> <p>QueueFilter SHOULD specify QueueEntryDef elements to select one or more queue entry items. The <i>Manager</i> MAY use the other <i>Traits</i> of QueueFilter.</p> <p>If QueueFilter is empty, then the <i>Worker</i> NEED NOT change the priority of any queue entry items; the resulting behavior is implementation dependent.</p> <p>Note: This behavior allows implementations to ensure that defective requests do not have far reaching unintended consequences.</p>

3.14.2 Response

Table 3.43: SetQueueEntryPriority Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	r?	w	@ID SHALL be unique for all messages initiated by the same sender.
refID	r	w	See ▶ [JDF 1.7].
ReturnCode	r	w	See ▶ [JDF 1.7].
Type	r	w	See ▶ [JDF 1.7].
SetQueueEntryPriority	r	w	

3.15 SubmissionMethods

SubmissionMethods SHOULD be used by the *Manager* to query the protocol details that are supported by the *Worker* for **SubmitQueueEntry** and **ResubmitQueueEntry**. **SubmissionMethods** SHOULD be used by the *Worker* to query the protocol details that are supported by the *Manager* for **ReturnQueueEntry**.

3.15.1 Query

Table 3.44: SubmissionMethods Query Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	w r	r w	@ID SHALL be unique for all messages initiated by the same sender. Any Response message SHALL provide a copy of this @ID in @refID.
Type	w r	r w	See ▶ [JDF 1.7].
SubmissionMethods	w r	r w	

3.15.2 Response

Table 3.45: SubmissionMethods Response Message (Sheet 1 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	r? w	w r?	@ID SHALL be unique for all messages initiated by the same sender.

Table 3.45: SubmissionMethods Response Message (Sheet 2 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ReturnCode</i>	r w	w r	See ▶ [JDF 1.7].
<i>Type</i>	r w	w r	See ▶ [JDF 1.7].
<i>SubmissionMethods</i>	r w	w r	
<i>SubmissionMethods</i>	r w	w r	See ▶ [JDF 1.7].

3.15.2.1 SubmissionMethods

Table 3.46: SubmissionMethods Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>Packaging</i>	r w	w r	See ▶ Section 2.2.2 URL External Reference vs MIME Encoded.
<i>URLSchemes</i>	r w	w r	See ▶ [JDF 1.7].
<i>http</i>	r w	w r	Both <i>Manager</i> and <i>Worker</i> SHALL support this protocol.
<i>https</i>	r? w←	w← r?	Both <i>Manager</i> and <i>Worker</i> SHOULD support this protocol.
<all other values>	w!	w!	

3.16 SubmitQueueEntry

3.16.1 Command

Table 3.47: SubmitQueueEntry Command Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	w	r	@ <i>ID</i> SHALL be unique for all messages initiated by the same sender. The <i>Response</i> message SHALL provide a copy of this @ <i>ID</i> in @ <i>refID</i> .
<i>Type</i>	w	r	See ▶ [JDF 1.7].
<i>SubmitQueueEntry</i>	w	r	
<i>QueueSubmissionParams</i>	w	r	See ▶ [JDF 1.7].

3.16.1.1 QueueSubmissionParams

Table 3.48: QueueSubmissionParams Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>Hold</i>	w?	r←	<i>@Hold</i> SHALL be supported if the <i>Worker</i> supports the <i>HoldQueueEntry</i> message. Conformance Test: If <i>@Hold = "true"</i> , then immediately after submission <i>QueueEntry/@Status</i> SHALL be "Held".
<i>Priority</i>	w?	r←	<i>@Priority</i> SHALL be supported if the <i>Worker</i> supports the <i>SetQueueEntryPriority</i> message. Conformance Test: If <i>@Priority</i> is specified, then immediately after submission <i>QueueEntry/@Priority</i> SHALL equal the value of <i>@Priority</i> .
<i>ReturnJMF</i>	w	r	Conformance Test: When the <i>QueueEntry</i> has completed, the <i>Worker</i> SHALL send the <i>ReturnQueueEntry</i> message to the URL specified by <i>@ReturnJMF</i> .
http:...	w←	r	Both <i>Manager</i> and <i>Worker</i> SHALL support this protocol.
https:...	w←	r?	Both <i>Manager</i> and <i>Worker</i> SHOULD support this protocol.
<all other values>	w!		
<i>ReturnURL</i>	w!		See ▶ [JDF 1.7].
<i>URL</i>	w	r	See ▶ [JDF 1.7].
cid:...	w←	r	Both <i>Manager</i> and <i>Worker</i> SHALL support this protocol. This is the recommended scheme for the <i>Manager</i> to use.
file:...	w←	r?	The "file" scheme URL NEED NOT be supported in an environment that does not support <i>Hot Folders</i> .
ftp:...	w?	r?	
http:...	w←	r	Both <i>Manager</i> and <i>Worker</i> SHALL support this protocol.
https:...	w←	r?	Both <i>Manager</i> and <i>Worker</i> SHOULD support this protocol.
<all other values>	w!		

3.16.2 Response

Table 3.49: SubmitQueueEntry Response Message (Sheet 1 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>ID</i>	r?	w	<i>@ID</i> SHALL be unique for all messages initiated by the same sender.
<i>refID</i>	r	w	See ▶ [JDF 1.7].
<i>ReturnCode</i>	r	w	See ▶ [JDF 1.7].
<i>Type</i>	r	w	See ▶ [JDF 1.7].
SubmitQueueEntry	r	w	

Table 3.49: SubmitQueueEntry Response Message (Sheet 2 of 2)

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
QueueEntry	r	w←	QueueEntry SHALL be specified by the Worker unless either the Command is being acknowledged (i.e., @Acknowledged = "true"), or the Command failed (i.e., the Worker responded with @ReturnCode != "0").

3.17 SuspendQueueEntry

3.17.1 Command

Table 3.50: SuspendQueueEntry Command Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	w	r	@ID SHALL be unique for all messages initiated by the same sender. The Response message SHALL provide a copy of this @ID in @refID .
Type	w	r	See ▶ [JDF 1.7].
SuspendQueueEntry	w	r	
SuspendQueueEntryParams	w	r	See ▶ [JDF 1.7].

3.17.1.1 SuspendQueueEntryParams

Table 3.51: SuspendQueueEntryParams Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
QueueFilter	w	r	<p>QueueFilter SHALL be specified to select queue entry items.</p> <p>QueueFilter SHOULD specify QueueEntryDef elements to select one or more queue entry items. The Manager MAY use the other Traits of QueueFilter.</p> <p>If QueueFilter is empty, then the Worker NEED NOT suspend any queue entry items; the resulting behavior is implementation dependent.</p> <p>Note: This behavior allows implementations to ensure that defective requests do not have far reaching unintended consequences.</p>

3.17.2 Response

Table 3.52: SuspendQueueEntry Response Message

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
ID	r?	w	@ID SHALL be unique for all messages initiated by the same sender.
refID	r	w	See ▶ [JDF 1.7].
ReturnCode	r	w	See ▶ [JDF 1.7].
Type	r	w	See ▶ [JDF 1.7].
SuspendQueueEntry	r	w	

3.18 Elements for Queues

This section specifies those elements that are common to messages supported by this ICS.

3.18.1 QueueEntry

Table 3.53: QueueEntry Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>JobID</i>	r?	w	See ▶ [JDF 1.7].
<i>JobPartID</i>	r?	w	See ▶ [JDF 1.7].
<i>Priority</i>	r?	w←	@ <i>Priority</i> SHALL be specified if the <i>Worker</i> supports prioritization of <i>Queue</i> entries.
<i>QueueEntryID</i>	r?	w	See ▶ [JDF 1.7].
<i>Status</i>	r?	w	See ▶ [JDF 1.7].
<i>SubmissionTime</i>	r?	w	See ▶ [JDF 1.7].
<i>Part</i>	r?	w←	If there is an <i>AncestorPool</i> in the root <i>Node</i> of the submitted <i>JDF</i> , and <i>Part</i> elements appear within <i>AncestorPool</i> , then the <i>QueueEntry/Part</i> elements SHALL be copies of <i>AncestorPool/Part</i> of the root <i>Node</i> of the submitted <i>JDF</i> .

3.18.2 QueueFilter

Table 3.54: QueueFilter Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>QueueEntryDef</i>	w?	r	The <i>Manager</i> SHOULD specify one or more <i>QueueEntryDef</i> elements to select queue entry items.

3.18.3 QueueEntryDef

Table 3.55: QueueEntryDef Element

NAME OR VALUE	MANAGER	WORKER	DESCRIPTION
<i>QueueEntryID</i>	w	r	Conformance Test: The queue entry referenced by @ <i>QueueEntryID</i> is acted upon based on the type of the message.

4 Resources

4.1 NodeInfo

Table 4.1: NodeInfo Resource

MESSAGE TYPE	MANAGER	WORKER	DESCRIPTION
<i>TargetRoute</i>	w!		Workers SHALL use JMF/Command [@Type = "SubmitQueueEntry"]/ QueueSubmissionParams / @ReturnJMF in lieu of @TargetRoute . See ▶ Table 3.48 QueueSubmissionParams Element.

Appendix A

A References

Table A.1: References

TERM	DEFINITION
[Base ICS]	<i>Base ICS</i> Version: 1.7 Date: February 2024 Produced by: CIP4 Organization Available at: http://www.CIP4.org
[Integrated Digital Printing ICS]	<i>Integrated Digital Printing ICS</i> Version: 1.7 Date: To be released Produced by: CIP4 Organization Available at: http://www.CIP4.org
[JDF 1.7]	<i>Job Definition Format Specification</i> Version: 1.7 Date: August 2020 Produced by: CIP4 Organization Available at: http://www.CIP4.org
[Management Information System ICS]	<i>Management Information System ICS</i> Version: 1.7 Date: February 2024 Produced by: CIP4 Organization Available at: http://www.CIP4.org
[MIS to Prepress ICS]	<i>MIS to Prepress ICS</i> Version: 1.7 Date: To be released Produced by: CIP4 Organization Available at: http://www.CIP4.org
[XPath]	<i>XML Path Language (XPath) 2.0 (Second Edition)</i> <i>Version W3C Recommendation 14 December 2010</i> Date: 14 December 2010 Produced by: World Wide Web Consortium (W3C) Available at: http://www.w3.org/TR/xpath20/

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