Job Ticket
Application Programming Interface

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Abstract

The Job Ticket Application Programming Interface (API) provides an abstract interface for applications to read, edit, and write industry standard document processing job tickets (defined outside this specification). This specification defines an abstract model of operations, objects (jobs, documents, etc.) and attributes for document processing. This specification also defines "C" and Java bindings of this abstract object model (including standard header files).

Copyright Notice

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1. INTRODUCTION

This specification describes and defines the Job Ticket Application Programming Interface (API) for the Free Standards Group. The Job Ticket API defines the abstract interface and does not imply or describe a job ticket or job ticket format. An implementation of the Job Ticket API (JTAPI) produces one or more the existing standard job tickets such as CIP4 Job Description Format (JDF) or the PWG Job Ticket Format.

The International Cooperation for the Integration of Process in Prepress, Press and Postpress (CIP4) is a joint initiative of vendors for the graphical arts industry [cip4]. CIP4 has published a Job Definition Format (JDF) specification. JDF is a comprehensive XML-based file format proposed industry standard for end-to-end job ticket specifications combined with a message description standard and message interchange protocol to cover all aspects of the commercial printing workflows.

JDF / 1.0 was published April of 2001. JDF / 1.1 was published in August 2002 [jdf]. JDF / 1.2 is due to be published the end of 2003. Yearly updates are foreseen as the needs of the printing industry evolve.

The Printer Working Group (PWG) is a joint initiative of printer vendors and print system providers to develop printing protocol standards for use on the Internet and within enterprises on their intra nets [pwg]. The PWG has published the Internet Printing Protocol (IPP) in September 2000 [rfc2910, rfc2911]

The PWG is in the process of publishing the PWG Semantic Model which summarizes the printing semantics common to a number of printing protocols, centered around IPP semantics [pwg-sm]. The PWG Semantic Model includes an XML Schema definition. Therefore, an XML Job Ticket using the semantics of the PWG Semantic Model is possible.

This specification has been developed and is intended for software developers, designers and architects.

The purpose of this specification is to define a Job Ticket Application Programming Interface (JTAPI) for the Linux/Unix/Posix Open Printing framework. The JTAPI creates and consumes job-tickets. The JTAPI is job-ticket syntax neutral. The JTAPI isolates an application from the content of a job-ticket. The JTAPI is programming language neutral.

2. TERMINOLOGY AND ACRONYMS <all>

 2.1 COMFORMANCE TERMINOLOGY < All >

 In this document, the uppercase terms "MUST", "MUST NOT", "REQUIRED", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" are intended to be interperted as described in [RFC2119]

In this document, each conformance statement uses one of the terms:

Term	*Meaning*
MUST	Implementation support of the element is REQUIRED.
SHOULD	Implementation support of the element is RECOMMENDED.
MAY	Implementation support of the element is OPTIONAL.

In this document, each operation, object, or attribute is defined as:

Term	*Meaning*
REQUIRED	Each implementation MUST support this element.
RECOMMENDED	Each implementation SHOULD support this element
OPTIONAL	Each implementation MAY support this element.

In this document, the term "support" is defined as:

| *Term*	*Meaning*
"support an operation"	An implementation MUST accept a syntactically correct instance of the operation (includes all REQUIRED parameters) and MUST return one of the defined results for the invoked operation.
"support an object"	An implementation MUST accept a syntactically correct instance of the object (includes all REQUIRED attributes) and MUST return one of the defined results for the invoked operation.
"support an attribute"	An implementation MUST accept a syntactically correct instance of the attribute (includes a valid value) and MUST return one of the defined results for the invoked operation. Further, an implementation MUST accept at least one value (other than the empty value NOT_SET) defined for the given attribute.

2.2 OTHER TERMINOLOGY <all>

Term	Meaning
Job Ticket	A set of one or more document processing activities, contained within a file or stream, serialized into some file format (for example, the XML instance textual encoding of a CIP4 JDF Job Ticket)..
Job	A set of one or more document processing activities, contained within a "Job Ticket", described by "Job Description" attributes, and processed according to "Job Processing" attributes.
Document	A single document to be processed, contained within a "JOB", described by "Document Description" attributes, and processed according to "Document Processing" attributes..
Page	A single logical page in a source document. Multiple source pages may be included in a single "Impression" on a "Side" of a "Sheet".
Sheet	A single physical piece of media.
Side	A single side (front or back) of "Sheet" of media.
Impression	A single image marked (by some means) on a "Side" of a "Sheet".

2.3 ACRONYMS < All >

Acronyms	Meaning	Source
CIP4	International **C**ooperation for the **I**ntegration of **P**rocesses in **P**repress, **P**ress and **P**ostpress	http://www.cip4.org/
JDF	**J**ob **D**efinition **F**ormat	Version 1.1, August 2002. See documentation tab at http://www.cip4.org/
PWG	**P**rinter **W**orking **G**roup	http://www.pwg.org/
FSG		

3. HIGH LEVEL MODEL < Claudia >

3.1 DIAGRAM < Claudia >

JTAPI Object Model

JobDocumentPage

Document

Job

JobTicketInfo

PageOverrides

InsertSheet

ForcePage

SeparatorSheet

Subscription

ContactInfo

Media

Key

italics   abstract class/operation
1   exactly 1 occurrence
0..1   0 or 1 occurrence
0..*   0 or more occurrences
1..*   1 or more occurrences

Alpha implementation
1.0 implementation
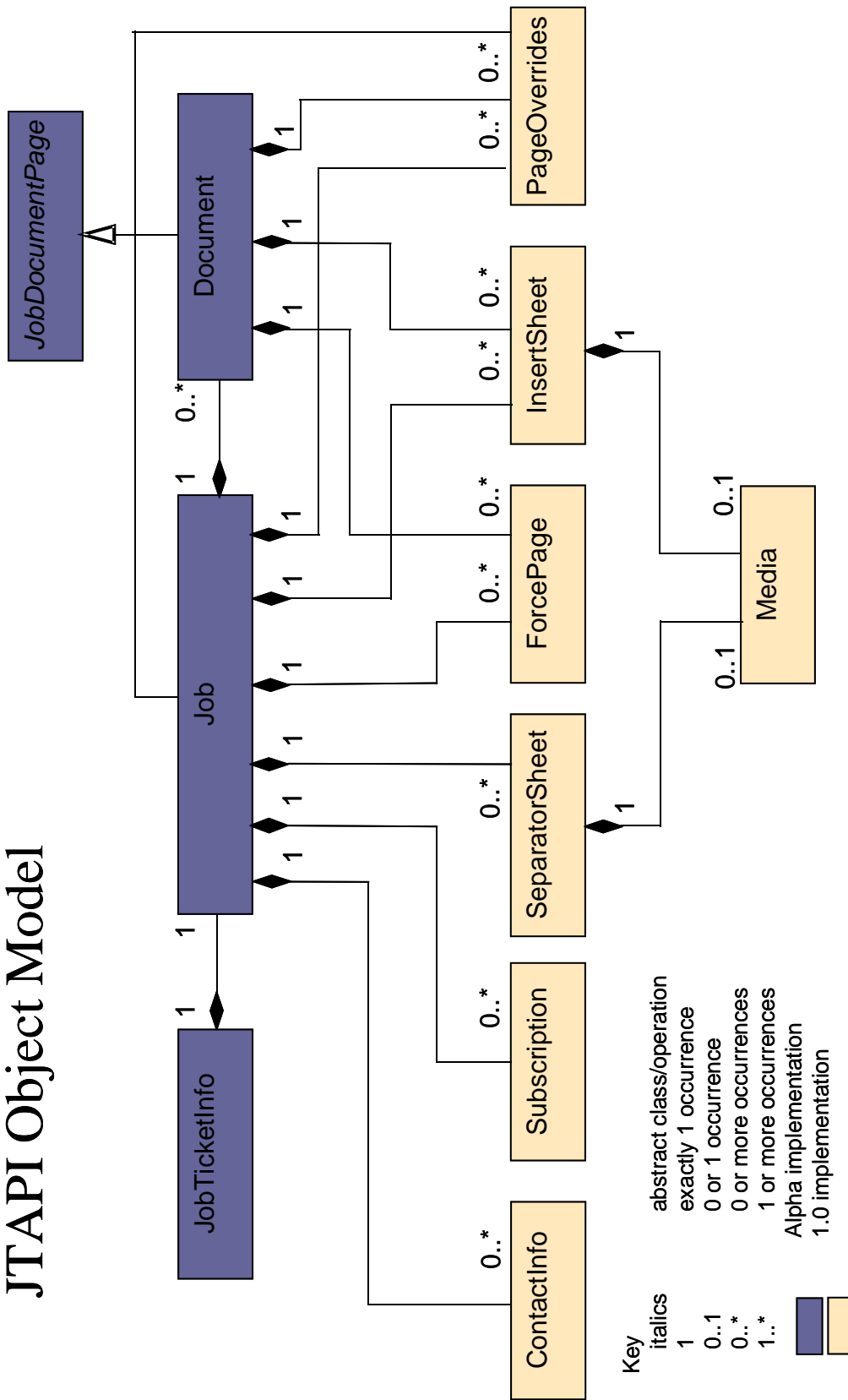
JTAPI Object Model (cont)
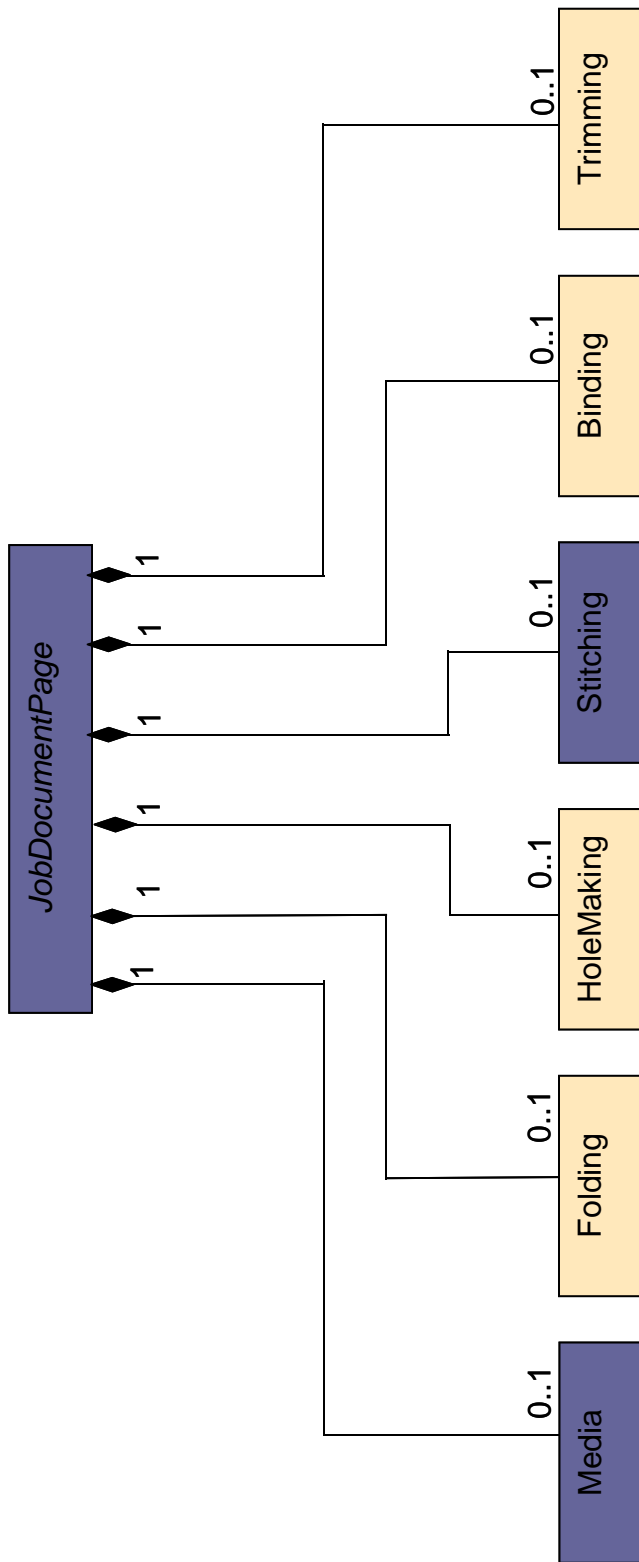
Complete set of UML diagrams:
ftp://ftp.pwg.org/pub/pwg/fsg/jobticket/JTAPI_Diagrams/

3.2 OBJECT DESCRIPTIONS< Claudia >

4. "C" IMPLEMENTATION FRAMEWORK < who >

4.1 HEADER FILES RELATIONSHIPS < who >

4.2 HEADER FILE NAMING CONVENTION < who >

4.3 LIST OF HEADER FILES < who >

5. JAVA IMPLEMENTATION FRAMEWORK

To be determined.

6. CONFORMANCE

[[Note: Should there be statement of the client/applications conformance using the API ?]]

A conforming library implementation of the Job Ticket API v1.0:

(1) MUST support the abstract object model defined in Section 3 of this specification;

(2) MUST publish one or more sets of standard header files verbatim from Section 4 or Section 5 of this specification;

(3) MAY publish one or more sets of vendor extension header files for each supported language binding defined in this specification;

(4) MUST support every REQUIRED object and attribute (with at least one supported value) defined in this specification;

(5) MAY support any OPTIONAL object or attribute (with at least one supported value) defined in this specification;

(6) MUST support read/write access to one or more industry standard job ticket formats (defined outside this specification);

(7) MAY support read/write access to one or more vendor-specific job ticket formats (defined outside this specification).

7. INERNATIONALIZATION

Each library implementation of the Job Ticket API MUST accept a charset tag [RFC2978] to specify the character set and encoding for all text strings. Each library implementation of the Job Ticket API MUST default to the UTF-8 [RFC2279] transform of [ISO10646] for text strings.

ISSUE: The Job Ticket API does NOT support the transfer of a language tag [RFC3166] to specify the natural language of text strings, although all XML-based job ticket formats support a language tag. Therefore the Job Ticket API only partially conforms to the IETF Policy on Character Sets and Languages [RFC2277].

8. SECURITY

The Job Ticket API does NOT support the transfer of any user security credentials. Each implementation of the Job Ticket API is a library that may be statically or dynamically linked with an application program. The application program itself may be authenticated and authorized by the native host operating system (by means outside the scope of this specification) for read and/or write access to job tickets stored on local or network file systems.

9. NORMATIVE REFERENCES < All, Tom to write example >

[RFC2119]

[RFC2910] Herriot, R., Butler, S., Moore, P., Turner, R., "Internet Printing Protocol/1.1: Encoding and Transport", RFC 2910, September 2000.

[RFC2911] R. deBry, T. Hastings, R. Herriot, S. Isaacson, P. Powell, " Internet Printing Protocol/1.10: Model and Semantics", RFC 2911, September 2000.

10. INFORMATIVE REFERENCES < All, Tom to write example >

[cip4] The International Cooperation for the Integration of Processes in Prepress, Press and Postpress (CIP4) located at http://www.cip4.org/

[jdf] The Job Definition Format (JDF), version 1.1, August 2002. Sett the Document tab at: http://www.cip4.org

[pwg] The Printer Working Group located at http://www.pwg.org/

[pwg-sm] Zehler, P., Hastings, T., and Albright, S., Printer Working Group (PWG): Semantic Model, March 26, 2003, work in progress at ftp://ftp.pwg.org/pub/Semantic-Model/wd-sm010-20030326.pdf

APPENDIX: X CHANGES < Editor >

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