PROJ Title of Document
(Acronym)

Status: Initial

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This document is available electronically at:

http://ftp.pwg.org/pub/pwg/general/templates/wd-template.docx

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In general, a PWG standard is a specification that is stable, well understood, and is technically competent, has multiple, independent and interoperable implementations with substantial operational experience, and enjoys significant public support.

For additional information regarding the Printer Working Group visit:

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**About the PROJECT NAME Work Group**

Description of PROJECT NAME.

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Implementers of this specification are encouraged to join the PROJECT NAME mailing list in order to participate in any discussions of the specification. Suggested additions, changes, or clarification to this specification, should be sent to the PROJECT Mailing list for consideration.

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Table 1 - An Example Table 4

1. Introduction

Provide an introduction for the document.

Figure 1 - An Example Figure

Table 1 - An Example Table Using the PWG Table Style

| Keyword | Description | Conformance |
| --- | --- | --- |
| One | The first keyword | REQUIRED |
| Two | The second keyword | OPTIONAL |

1. Terminology
	1. Conformance Terminology

Capitalized terms, such as MUST, MUST NOT, RECOMMENDED, REQUIRED, SHOULD, SHOULD NOT, MAY, and OPTIONAL, have special meaning relating to conformance as defined in Key words for use in RFCs to Indicate Requirement Levels [RFC2119]. The term CONDITIONALLY REQUIRED is additionally defined for a conformance requirement that applies when a specified condition is true.

* 1. Printing Terminology

Normative definitions and semantics of printing terms are imported from IETF Printer MIB v2 [RFC3805], IETF Finisher MIB [RFC3806], and IETF Internet Printing Protocol/1.1: Model and Semantics [RFC2911].

*Document*: An object created and managed by a Printer that contains the description, processing, and status information. A Document object may have attached data and is bound to a single Job.

*Job*: An object created and managed by a Printer that contains description, processing, and status information. The Job also contains zero or more Document objects.

*Logical Device*: a print server, software service, or gateway that processes jobs and either forwards or stores the processed job or uses one or more Physical Devices to render output.

*Output Device*: a single Logical or Physical Device

*Physical Device*: a hardware implementation of a endpoint device, e.g., a marking engine, a fax modem, etc.

* 1. Protocol Role Terminology

This document also defines the following protocol roles in order to specify unambiguous conformance requirements:

*Client*: Initiator of outgoing connections and sender of outgoing operation requests (Hypertext Transfer Protocol -- HTTP/1.1 [RFC7230] User Agent).

*Printer*: Listener for incoming connections and receiver of incoming operation requests (Hypertext Transfer Protocol -- HTTP/1.1 [RFC7230] Server) that represents one or more Physical Devices or a Logical Device.

* 1. Other Terminology

*Capitalized Term In Italics*: defininition of the term with any references as appropriate.

* 1. Acronyms and Organizations

*IANA*: Internet Assigned Numbers Authority, <http://www.iana.org/>

*IETF*: Internet Engineering Task Force, <http://www.ietf.org/>

*ISO*: International Organization for Standardization, <http://www.iso.org/>

*PWG*: Printer Working Group, <http://www.pwg.org/>

1. Requirements
	1. Rationale for Title of Document

Given the following existing specifications:

1. Title of First Specification [REFERENCE1]
2. Title of Second Specification [REFERENCE2]
3. ...
4. Title of Nth Specification [REFERENCEN]

And given the need for WHAT YOU NEED, the TITLE OF DOCUMENT should:

1. Provide foo,
2. Define bar, and
3. Define bla.
	1. Use Cases

Provide use cases for the document in subsections using the casual use case format.

* 1. Exceptions

Provide exceptions for the use cases using the casual use case format.

* 1. Out of Scope

The following are considered out of scope for this specification:

1. Definition of foo
2. Protocols for bar
3. Requirements for bla
	1. Design Requirements

The design requirements for this specification are:

1. Define attributes for foo and bar
2. Define operations for bla
3. Register all attributes and operations with IANA

The design recommendations for this specification are:

1. Support additional "nice to have" use cases
2. First Specification Section

Provide specification information starting in section 4.

1. Conformance Requirements

Provide numbered lists of conformance requirements for the document.

1. Internationalization Considerations

Tailor the following standard considerations.

For interoperability and basic support for multiple languages, conforming implementations MUST support:

1. The Universal Character Set (UCS) Transformation Format -- 8 bit (UTF-8) [STD63] encoding of Unicode [UNICODE] [ISO10646]; and
2. The Unicode Format for Network Interchange [RFC5198] which requires transmission of well-formed UTF-8 strings and recommends transmission of normalized UTF-8 strings in Normalization Form C (NFC) [UAX15].

Unicode NFC is defined as the result of performing Canonical Decomposition (into base characters and combining marks) followed by Canonical Composition (into canonical composed characters wherever Unicode has assigned them).

WARNING – Performing normalization on UTF-8 strings received from Clients and subsequently storing the results (e.g., in Job objects) could cause false negatives in Client searches and failed access (e.g., to Printers with percent-encoded UTF-8 URIs now 'hidden').

Implementations of this specification SHOULD conform to the following standards on processing of human-readable Unicode text strings, see:

Unicode Bidirectional Algorithm [UAX9] – left-to-right, right-to-left, and vertical

Unicode Line Breaking Algorithm [UAX14] – character classes and wrapping

Unicode Normalization Forms [UAX15] – especially NFC for [RFC5198]

Unicode Text Segmentation [UAX29] – grapheme clusters, words, sentences

Unicode Identifier and Pattern Syntax [UAX31] – identifier use and normalization

Unicode Collation Algorithm [UTS10] – sorting

Unicode Locale Data Markup Language [UTS35] – locale databases

Implementations of this specification are advised to also review the following informational documents on processing of human-readable Unicode text strings:

Unicode Character Encoding Model [UTR17] – multi-layer character model

Unicode in XML and other Markup Languages [UTR20] – XML usage

Unicode Character Property Model [UTR23] – character properties

Unicode Conformance Model [UTR33] – Unicode conformance basis

1. Security Considerations

Provide security considerations for this specification, such as the following.

The IPP extensions defined in this document require the same security considerations as defined in the IPP/1.1: Model and Semantics [RFC2911].

Implementations of this specification SHOULD conform to the following standard on processing of human-readable Unicode text strings, see:

Unicode Security Mechanisms [UTS39] – detecting and avoiding security attacks

Implementations of this specification are advised to also review the following informational document on processing of human-readable Unicode text strings:

Unicode Security FAQ [UNISECFAQ] – common Unicode security issues

1. IANA and PWG Considerations

Provide IANA and PWG registration information for this specification.

* 1. Attribute Registrations

The attributes defined in this document will be published by IANA according to the procedures in IPP/1.1 Model and Semantics [RFC2911] section 6.2 in the following file:

http://www.iana.org/assignments/ipp-registrations

The registry entries will contain the following information:

Document Description attributes: Reference

-------------------------- ---------

name (type) [REFERENCE]

Document Status attributes: Reference

-------------------------- ---------

name (type) [REFERENCE]

Document Template attributes: Reference

-------------------------- ---------

name (type) [REFERENCE]

Job Description attributes: Reference

-------------------------- ---------

name (type) [REFERENCE]

Job Status attributes: Reference

-------------------------- ---------

name (type) [REFERENCE]

Job Template attributes: Reference

-------------------------- ---------

name (type) [REFERENCE]

Operation attributes: Reference

-------------------- ---------

name (type) [REFERENCE]

Printer Description attributes: Reference

------------------------------ ---------

name (type) [REFERENCE]

Printer Status attributes: Reference

------------------------------ ---------

name (type) [REFERENCE]

Subscription Description attributes: Reference

------------------------------ ---------

name (type) [REFERENCE]

Subscription Status attributes: Reference

------------------------------ ---------

name (type) [REFERENCE]

Subscription Template attributes: Reference

------------------------------ ---------

name (type) [REFERENCE]

* 1. Attribute Value Registrations

The attributes defined in this document will be published by IANA according to the procedures in IPP/1.1 Model and Semantics [RFC2911] section 6.1 in the following file:

http://www.iana.org/assignments/ipp-registrations

The registry entries will contain the following information:

Attributes (attribute syntax)

 Keyword Attribute Value Reference

 ----------------------- ---------

name (type2 keyword) [REFERENCE]

 value-1 [REFERENCE]

 value-2 [REFERENCE]

name-supported (1setOf type2 keyword) [REFERENCE]

 < all name values > [REFERENCE]

* 1. Type2 enum Registrations

The attributes defined in this document will be published by IANA according to the procedures in IPP Model and Semantics [RFC2911] section 6.1 in the following file:

http://www.iana.org/assignments/ipp-registrations

The registry entries will contain the following information:

Attributes (attribute syntax)

 Enum Value Enum Symbolic Name Reference

 ---------- ------------------ ---------

name (type2 enum) [REFERENCE]

 3 value-3 [REFERENCE]

 4 value-4 [REFERENCE]

operations-supported (1setOf type2 enum) [RFC2911]

 0xXXXX Operation-Name [REFERENCE]

* 1. Operation Registrations

The attributes defined in this document will be published by IANA according to the procedures in IPP/1.1 Model and Semantics [RFC2911] section 6.4 in the following file:

http://www.iana.org/assignments/ipp-registrations

The registry entries will contain the following information:

Operation Name Reference

-------------- ---------

Operation-Name [REFERENCE]

Exiting-Operation-Name (Extension) [REFERENCE]

* 1. Status Code Registrations

The attributes defined in this document will be published by IANA according to the procedures in IPP/1.1 Model and Semantics [RFC2911] section 6.6 in the following file:

http://www.iana.org/assignments/ipp-registrations

The registry entries will contain the following information:

Value Status Code Name Reference

------ --------------------------------------------- ---------

0x0400:0x04FF - Client Error:

 0x04XX client-error-name [REFERENCE]

0x0500:0x05FF - Server Error:

 0x05XX server-error-name [REFERENCE]

* 1. Semantic Model Registrations

The extensions defined in this specification and provided in the following file:

http://ftp.pwg.org/pub/pwg/NAME/wd/wd-docname-YYYYMMDD.zip

will be added to the PWG Semantic Model XML schema.

*OR*

Except as noted below, the IPP attributes, values, and operations defined in this specification and listed in the preceding sections will be added to the PWG Semantic Model XML schema using the method defined in section 21 of [PWG5108.07].

Table 2 lists the attributes that are mapped to alternate element names.

Table 2 - New Semantic Model Element Names

|  |  |
| --- | --- |
| Attribute Name | Element Name |
| name | AlternateName |
| name-supported | Capabiltiies/AlternateName |

Table 3 lists the values that are mapped to alternate Well-Known Values.

Table 3 - New Semantic Model Well-Known Values

|  |  |  |
| --- | --- | --- |
| Attribute Name | Value | Well-Known Value |
| name | value-1 | AlternateValue1 |
| name | value-2 | AlternateValue2 |

Table 4 lists the operations that are mapped to alternate operation names.

Table 4 - New Semantic Model Operations

|  |  |
| --- | --- |
| IPP Operation Name | Semantic Model Operation Name |
| Operation-Get-Name | AlternateGetName |
| Operation-Set-Name | AlternateSetName |

1. References
	1. Normative References

[REFERENCE] F. Last author list or standards body, "Title of referenced document", Document Number, Month YYYY, URL (if any)

[ISO10646] "Information technology -- Universal Coded Character Set (UCS)", ISO/IEC 10646:2011

[PWG5108.07] P. Zehler, "PWG Print Job Ticket and Associated Capabilities Version 1.0", PWG 5108.07-2012, August 2012, <http://ftp.pwg.org/pub/pwg/candidates/cs-sm20-pjt10-20120801-5108.07.pdf>

[RFC2119] S. Bradner, "Key words for use in RFCs to Indicate Requirement Levels", RFC 2119/BCP 14, March 1997, <http://tools.ietf.org/html/rfc2119>

[RFC2911] T. Hastings, R. Herriot, R. deBry, S. Isaacson, P. Powell, "Internet Printing Protocol/1.1: Model and Semantics", RFC 2911, September 2000, <http://tools.ietf.org/html/rfc2911>

[RFC5198] J. Klensin, M. Padlipsky, "Unicode Format for Network Interchange", RFC 5198, March 2008, <http://tools.ietf.org/html/rfc5198>

[RFC7230] R. Fielding, J. Reschke, "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing", RFC 7230, June 2014, <http://tools.ietf.org/html/rfc7230>

[STD63] F. Yergeau, "UTF-8, a transformation format of ISO 10646", RFC 3629/STD 63, November 2003, <http://tools.ietf.org/html/rfc3629>

[STD66] T. Berners-Lee, R. Fielding, L. Masinter, "Uniform Resource Identifier (URI): Generic Syntax", RFC 3986/STD 66, January 2005, <http://tools.ietf.org/html/rfc3986>

[UAX9] Unicode Consortium, “Unicode Bidirectional Algorithm”, UAX#9, June 2014,
<http://www.unicode.org/reports/tr9/tr9-31.html>

[UAX14] Unicode Consortium, “Unicode Line Breaking Algorithm”, UAX#14, June 2014,
<http://www.unicode.org/reports/tr14/tr14-33.html>

[UAX15] Unicode Consortium, “Normalization Forms”, UAX#15, June 2014,
<http://www.unicode.org/reports/tr15/tr15-41.html>

[UAX29] Unicode Consortium, “Unicode Text Segmentation”, UAX#29, June 2014,
<http://www.unicode.org/reports/tr29/tr29-25.html>

[UAX31] Unicode Consortium, “Unicode Identifier and Pattern Syntax”, UAX#31, June 2014,
<http://www.unicode.org/reports/tr31/tr31-21.html>

[UNICODE] Unicode Consortium, "Unicode Standard", Version 8.0.0, June 2015,
<http://www.unicode.org/versions/Unicode8.0.0/>

[UTS10] Unicode Consortium, “Unicode Collation Algorithm”, UTS#10, June 2014,
<http://www.unicode.org/reports/tr10/tr10-30.html>

[UTS35] Unicode Consortium, “Unicode Locale Data Markup Language”, UTS#35, September 2014,
<http://www.unicode.org/reports/tr35/tr35-37/tr35.html>

[UTS39] Unicode Consortium, “Unicode Security Mechanisms”, UTS#39, September 2014,
<http://www.unicode.org/reports/tr39/tr39-9.html>

* 1. Informative References

[REFERENCE] F. Last author list or standards body, "Title of referenced document", Document Number, Month YYYY, URL (if any)

[UTR17] Unicode Consortium “Unicode Character Encoding Model”, UTR#17, November 2008,
<http://www.unicode.org/reports/tr17/tr17-7.html>

[UTR20] Unicode Consortium “Unicode in XML and other Markup Languages”, UTR#20, January 2013,
<http://www.unicode.org/reports/tr20/tr20-9.html>

[UTR23] Unicode Consortium “Unicode Character Property Model”, UTR#23, November 2008,
<http://www.unicode.org/reports/tr23/tr23-9.html>

[UTR33] Unicode Consortium “Unicode Conformance Model”, UTR#33, November 2008,
<http://www.unicode.org/reports/tr33/tr33-5.html>

[UNISECFAQ] Unicode Consortium “Unicode Security FAQ”, November 2013,
<http://www.unicode.org/faq/security.html>

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1. Change History
	1. Month, DD, YYYY

Initial revision.