PERSONALIZED PRINT

P P M L

MARKUP LANGUAGE

Graphic Arts Conformance Specification

PODi
the Digital Printing initiative

PODi the Digital Printing Initiative

Approval of a PODi standard requires acceptance by the members of PODi.

PODi is a not for profit industry consortium formed in 1996. Its charter is to foster the growth of the digital printing industry through market and standards development activities. PODi constantly monitors market and technology trends in the industry, and shares information through seminars, independent research, white papers, articles, and the web. PODi promotes interoperability through the PPML suite of open, XML based standards, test suites and certification.

PODi welcomes feedback on this specification, and offers the following services to support widespread adoption of the specification:

Specification Updates

> The PPML Functional specification is distributed free of charge. Developers who are implementing the PPML standard are invited to subscribe to free PPML updates and the technical note service.

Developer Support web site

> Software and hardware developers interested in supporting PPML are invited to register for the PPML Developers discussion group.

To participate in the PPML initiative, send an email to ppmlinfo@podi.org.

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Foreword

PODi: the Digital Printing Initiative developed this Graphic Arts Conformance Specification to enable interoperability among PPML Producers and Consumers in the Graphic Arts marketplace.

This specification is a conformance statement defining a conformance subset of PPML. Readers are directed to the PPML Functional specification for the definition of the syntax and semantics of PPML.

PODi does not guarantee the suitability of any of PPML or any of the conformance subsets for any specific purpose.

The working group responsible for the current specification had the following membership:

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Send suggestions for improving this standard to PODi, 1240 Jefferson Road, Rochester, NY 14623, USA; e-mail: ppmlinfo@podi.org.

Introduction

The Personalized Print Markup Language (PPML) Graphic Arts Conformance Specification Version 2.2 is built upon the current PPML 2.2 Specification. This Graphic Arts conformance subset defines additional requirements for GA conforming PPML Consumers and Producers to enhance interoperability. Therefore, understanding this specification requires familiarity with and understanding of the PPML Functional specification.

This conformance subset requires that:

- digital assets referenced by or included in PPML datasets are limited to the following common graphic arts formats: PostScript, PDF, TIFF, and JPEG, and Consumers are required to support these formats.

- PPML datasets do not contain the **SEGMENT_ARRAY**, **SEGMENT_REF**, **TICKET**, **TICKET_REF**, **TICKET_STATE**, **TICKET_SET**, **IMPOSITION**, and **PRINT_LAYOUT** elements

- Consumers interpret device dependent colors in digital assets in accordance with either the sRGB or SWOP specification to allow existing digital assets to be reproduced consistently

- PPML datasets do not reference multipage PostScript files

- digital assets referenced or included in PPML datasets do not contain transparency information (eg. alpha channels)

- PPML datasets refer to external files either via relative paths or URIs' using the "file:" scheme.

This conformance subset distinguishes two levels: level 1 for blind exchange of PPML datasets and level 2 for controlled exchange.

Graphic Arts Conformance Subset

1   Scope

This specification is a conformance statement for a PPML conformance subset for the Graphic Arts industry.

2   Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including amendments) applies.

Adobe Systems Incorporated. *Encapsulated PostScript File Format Specification; Technical Note 5002* (Version 3.0). 1 May 1992.

Adobe Systems Incorporated. *PDF Reference* (Second Edition). 2000. Addison-Wesley Professional.

Adobe Systems Incorporated. *Postscript Language Reference Manual* (Third Edition). February 1999. Addison-Wesley Professional.

Adobe Systems Incorporated. *TIFF Revision 6.0* (Second Edition). June, 1992..

ICC Version 4.2.0.0: ICC Profile Format Specification, version 4.2.0.0. October 2004.
http://www.color.org/ICC1V42.pdf

IETF (Internet Engineering Task Force). *RFC 2396: Uniform Resource Identifiers (URI): Generic Syntax*. T. Berners-Lee, R. Fielding, L. Masinter. 1998. http://www.ietf.org/rfc/rfc2396.txt

International Electrotechnical Commission. Multimedia systems and equipment - Colour measurement and management - Part 2-1: Colour management - Default RGB colour space -sRGB. October, 1999. http://domino.iec.ch

ISO/IEC IS 10918 (JPEG).

JPEG File Interchange Format, Version 1.02, September 1992 http://www.w3.org/Graphics/JPEG/jfif3.pdf

Print on Demand Initiative. Personalized Print Markup Language specification. Version 2.2 February 2006.

Specifications Web Offset Publications (SWOP). (10th Edition.) http://www.swop.org

2.1 Other References

ANSI CGATS.20-2002, *Graphic Technology – Variable printing data exchange using PPML and PDF (PPML/VDX)*, American National Standards Institute, available from NPES The Association for Suppliers of Printing, Publishing and Converting Technologies, http://www.npes.org/standards/workroom.html

EXIF specification: Standard of Japan Electronics and Information Technology Industries Association, JEITA CP-3451 "Exchangeable image file format for digital still cameras: Exif Version 2.2", April 2002, http://www.exif.org/Exif-2.2.pdf

3　Terms, symbols, notations, and abbreviations

Refer to Section 4 in the *PPML Functional specification.*

4   Conformance

4.1   Requirements

The PPML/GA conformance subset comprises conforming PPML 2.2 datasets that shall:

- have a **CONFORMANCE** element whose *Subset* attribute has a value of "GA"

- only contain references to PDF 1.3, PostScript Level 3, TIFF 6.0, JPEG and JFIF content data

- reference PostScript level 3 content data using the mimetype "application/postscript"

- reference PDF 1.3 content data using the mimetype "application/pdf"

- reference TIFF 6.0 content data using the mimetype "image/tiff"

- reference JPEG content data using the mimetype "image/jpeg"

- reference JFIF content data using the mimetype "image/jpeg"

- only refer to or include supplemental source data in PostScript format.

4.2   Exclusions

The PPML/GA conformance subset comprises conforming PPML 2.2 datasets that shall not:

- refer to or include TIFF 6.0 content data containing alpha channel data

- refer to or include TIFF 6.0 content data that contains a Compression tag with a value of 6 (JPEG compression).

- refer to or include JPEG or JFIF content data other than those with Start-of-Frame markers SF0, SF1, or SF2.

- refer to or include PostScript Level 3 content data with more than one page.

- refer to or include PostScript Level 3 content data that contains restricted operators or relies on the execution of illegal operators as defined in "Encapsulated PostScript File Format Specification Version 3.0", Adobe Technical Note #5002 and as amended by Appendix G, "Operator Usage Guidelines" of the *Postscript Language Reference Manual.*

- contain **SEGMENT_ARRAY**, **SEGMENT_REF**, **PRINT_LAYOUT**, **IMPOSITION**, **IMPOSITION_REF**, **TICKET**, **TICKET_REF**, **TICKET_SET** or **TICKET_STATE** elements.

- not reference files with mime type "application/postscript" or "image/jpeg" using the **EXTERNAL_DATA_ARRAY** element.

- refer to or include PDF content data that refers to a font that is supplied in that PPML dataset.

- use elements or attributes marked as deprecated in the PPML Functional specification.

NOTE   Some files containing the .jpg or .jpeg extension in their name are not JPEG or JFIF files, but adhere to the EXIF file format which may not be referenced in a PPML/GA compliant dataset.

4.3 Level 1 GA Conformance

The level 1 PPML/GA conformance subset is a subset of the PPML/GA conformance subset that comprises conforming PPML 2.2 datasets that shall additionally:

- have a **CONFORMANCE** element whose *Subset* attribute has a value of "GA" and whose *Level* attribute has a value of "1".

- have a *ResourcesIncluded* attribute with a value of "Yes" on the PPML element.

NOTE   The level 1 PPML/GA conformance subset enables a level 1 PPML/GA Producer to create PPML datasets that can be sent to any level 1 PPML/GA Consumer as those datasets can be consumed independent of resources that may or may not be available in the Consumer's environment.

4.3.1 Level 1 GA Producer Conformance

A conforming level 1 PPML/GA Producer shall be a conforming PPML Producer for the level 1 PPML/GA conformance subset.

4.3.2 Level 1 GA *C*onsumer Conformance

A conforming level 1 PPML/GA Consumer shall:

- be a conforming PPML Consumer for the level 1 PPML/GA conformance subset

- ensure that supplied resources which have been marked as required for PostScript content data are loaded in PostScript VM before processing that content data.

- process device dependent colors in content data files as if they were specified in either sRGB or SWOP unless explicitly overridden by a job ticket associated with the PPML data file referencing those content data files. sRGB shall be used for 3 component color specifications and SWOP shall be used for 1 or 4 component color specifications.

- process spot colors in content data files such that the resulting colors closely match the results of using the specified alternate color space for that spot color.

NOTE   A JDF based system could specify a remapping of device-dependent colors and has the capability of honoring the default specified by the PPML/GA specification.

4.4   Level 2 GA Conformance

The level 2 PPML/GA conformance subset is a subset of the PPML/GA conformance subset that comprises conforming PPML 2.2 datasets that shall additionally:

- have a **CONFORMANCE** element whose *Subset* attribute has a value of "GA" and whose *Level* attribute has a value of "2".

4.4.1   Level 2 GA Producer Conformance

A conforming level 2 PPML/GA Producer shall be a conforming PPML Producer for the level 2 PPML/GA conformance subset.

4.4.2   Level 2 GA *C*onsumer Conformance

A conforming level 2 PPML/GA Consumer shall:

- be a conforming PPML/GA level 1 Consumer

- be a conforming PPML Consumer for the level 2 PPML/GA conformance subset.

4.5   PDF Constraints

In accordance with the PDF specification, a PPML Consumer must rotate the page contents based on the value of the /Rotate key associated with a PDF Page prior to applying any additional transformations specified in PPML. Therefore a PDF page with a portrait MediaBox and a /Rotate key of 90 shall be rendered landscape in PPML if no other transformations are applied. The *Dimensions* attribute of the **SOURCE** element referring to such a PDF page shall match the width and height of that page after applying the rotation based on the /Rotate key value.

NOTE   The way PPML/GA handles the /Rotate key differs from how PPML/VDX handles the /Rotate key. If compatibility with both conformance subsets is required all pages should have a value of 0 for the /Rotate key, if present, on each PDF page.

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Annex A
(informative)
Revision history

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A.1 GA November 2006

- Initial release as a dedicated document. Previously information was contained in the PPML Functional specification.

- Restricted the use of multi-page PostScript.

- Added requirement for PDF files to be self-contained.

- Removed support for alpha-channels in TIFF data.

- Removed support for JPEG/JFIF files with differential encoding.

- Added support for JFIF files.

- Removed required support for job ticketing and therefore the **TICKET**, **TICKET_REF**, **TICKET_SET** and **TICKET_STATE** elements.

- Removed support for impositioning and therefore the **PRINT_LAYOUT** and **IMPOSITION** elements.

- Removed support for **SEGMENT_ARRAY** and **SEGMENT_REF**.

- Removed support for deprecated PPML elements and attributes.

- Added requirement to rotate the page contents based on the value of the /Rotate key associated with a PDF Page prior to applying any additional transformations specified in PPML.

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