Acrobat® Implementation of the PDF Specification

Adobe® Acrobat SDK

April 2007

Version 8.1

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Adobe® Acrobat SDK Implementation of the PDF Specification

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Preface

The Portable Document Format (PDF) is a file format for representing documents in a manner independent of the application software, hardware, and operating system used to create them and of the output device on which they are to be displayed or printed.

What's in this guide?

This guide describes PDF features supported in the Adobe® Acrobat® 8.1 family of products but not yet reflected in the PDF specification. The PDF specification is currently represented by the *PDF Reference, sixth edition, version 1.7* (Nov. 2006) and the *PDF Redaction: Addendum to the PDF Reference, sixth edition, version 1.7*.

Who should read this guide?

This guide is intended for developers of applications that consume or produce PDF content intended for use with the Adobe Acrobat 8.1 family of products.

Related documentation

The resources in this table can help you understand the material in this document. These resources are contained in the PDF package that also contains this guide.

For information about	**See**
PDF specification	*PDF Reference, sixth edition, version 1.7*
PDF specification for redaction annotations	*PDF Redaction: Addendum to the PDF Reference, sixth edition, version 1.7*
Corrections to the PDF specification	*Errata for the PDF Reference, sixth edition, version 1.7*

1 Transitioning the PDF Specification to ISO

Adobe is working to transition responsibility for the PDF specification to the International Standards Organization (ISO). The PDF specification is currently represented by the *PDF Reference, sixth edition, version 1.7* (Nov. 2006) and the *PDF Redaction: Addendum to the PDF Reference, sixth edition, version 1.7*. These documents represent the last PDF specification produced by Adobe.

Adobe will continue producing the *Errata for the PDF Reference, sixth edition, version 1.7* until ISO re-issues the PDF specification or otherwise assumes responsibility for documenting errors in the PDF specification.

After ISO assumes responsibility for the PDF specification, the language extensions described in this guide may be submitted to ISO as proposed changes to the PDF specification. ISO may or may not accept these Adobe extensions. If accepted, the exact syntax and semantics of the ISO version of these extensions may differ from that described in this guide.

2 Extensions to the PDF Specification

This section describes extensions to the PDF specification. These extensions are described relative to the *PDF Reference, sixth edition, version 1.7*, which is contained in the PDF package that also includes this guide.

This guide uses italics to identify information not intended for inclusion in the PDF specification.

3D annotations and PRC

Starting with Acrobat 8.1, 3D annotations can specify streams that conform to the PRC file format. PRC is a new highly-compressed CAD visualization format.

9.5 3D Artwork

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Append the indicated sentence to the bullet that begins, "3D stream contain …" Unchanged content is shown in gray.

The following sections describe the major PDF objects that relate to 3D artwork, as well as providing background information on 3D graphics:

- 3D annotations provide a virtual camera through which the artwork is viewed. (see Section 9.5.1, "3D Annotations").
- 3D streams contain the actual specification of a piece of 3D artwork (see Section 9.5.2, "3D Streams"). This specification supports the standard ECMA-363, Universal 3D file format developed by the 3D Industry Forum (see Bibliography). Acrobat 8.1 extends PDF to support the PRC file format [see Bibliography].

9.5.2 3D Streams

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In table 9.35, "Entries in a 3D stream dictionary" modify the `Subtype` *entry as shown below.*

KEY	SUBTYPE	DESCRIPTION
`Subtype`	name	(*Required*) A name specifying the format of the 3D data contained in the stream. The following valid values are supported: `U3D`, which specifies the Universal 3D file format. `PRC`, which specifies the PRC file format. This value is an extension supported by Acrobat 8.1.

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Delete the sentence that begins "The only valid value …" in the following paragraph. The material in that sentence is covered in table 9.35, as amended by this guide.

The `Subtype` entry specifies the format of the 3D stream data. ~~The only valid value is U3D, which indicates that the stream data conforms to the Universal 3D File Format specification~~ (see Bibliography). PDF consumer applications must be prepared to encounter unknown values for `Subtype` and recover appropriately, which usually means leaving the annotation in its inactive state, displaying its normal appearance.

9.5.3 3D Views

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In table 9.39, "Entries in a 3D view dictionary", modify the `MS` entry as shown below.

KEY	SUBTYPE	DESCRIPTION
`MS`	name	(*Optional*) A name specifying the entry to use for the 3D camera-to-world transformation matrix. The following values are supported: `M` indicates that the `C2W` entry specifies the matrix `U3D` indicates that the `U3DPath` entry in the 3D stream object is used for the matrix. This value reflects the sole supported value of the `Subtype` entry in the 3D stream dictionary. **Note:** There is no corresponding `MS` field value for the PRC file format, that would correspond to a 3D stream object of type `PRC`. `M` is the only valid entry for 3D stream objects of type `PRC` (or it may be omitted). If omitted, the view specified in the 3D artwork is used.

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In table 9.47, "Entries in a 3D node dictionary", modify the `N` *entry as shown below.*

KEY	SUBTYPE	DESCRIPTION
`N`	text string	(*Required*) The name of the node being described by the node dictionary. Interpretation of this entry depends upon the 3D format specified in the `Subtype` entry in table 9.35, as described below: • U3D. If the `Subtype` of the corresponding 3D Stream is `U3D`, this entry corresponds to the field Node block name, specified in the Universal 3D File Format (see Bibliography). • PRC. If the `Subtype` of the corresponding 3D Stream is `PRC`, this entry is constructed from fields stored in the PRC stream. For information on deriving names from PRC fields, see the documentation module "Naming PRC entities for outside PDF referencing" in the *PRC Format* (see Bibliography). **Note:** When comparing this entry to node names for a particular convention (such as the Universal 3D File Format), PDF viewer applications must translate between the PDF text encoding used by PDF and the character encoding specified in the 3D stream.

Bibliography

Resources from Adobe Systems Incorporated

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Add the following documents to the Bibliography:

PRC specification: The following documents collectively provide the PRC file format specification. These documents are available at www.adobe.com/go/acrobat3d_developer:

- *PRC Format*
- *Geometry Compression Level 2*
- *Tesselation Compression Level 2*

3D annotations and Universal 3D File Format

PDF 1.6 and greater provided support for ECMA-363, Universal 3D file format, edition 1. Acrobat 8.1 extends this support to ECMA-363, Universal 3D file format, 3rd Edition.

Bibliography

Other Resources

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Replace the following Ecma reference. This change reflects a correction documented in the Errata for the PDF Reference, sixth edition, version 1.7.

Ecma International, Standard ECMA-363, *Universal 3D File Format, 1st Edition*. This document is available at www.ecma-international.org.

With this:

Ecma International. The following standards are available through <www.ecma-international.org.>.

- ECMA-363, *Universal 3D File Format, 1st Edition*.
- ECMA-363, *Universal 3D File Format, 3rd Edition*.

Field dictionary specification of rich text conventions

Acrobat 8.1 extends support for the rich text conventions described in XML Forms Architecture (XFA) version 2.5. This specification is available at www.adobe.com/go/devnet.

8.6.2 Field dictionaries: Rich Text Stringsoys

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In Table 8.73, "Attributes of the <body> element", Acrobat 8.1 adds support for the rich text specified in XML Forms Architecture (XFA), versions 2.5 and 2.6. The following entry reflects the clarified description from the Errata for the PDF Reference, sixth edition, version 1.7, available at www.adobe.com/go/acrobat_developer. *(Select the "Documentation" tab.) Unchanged content is shown in gray.*

ATTRIBUTE	DESCRIPTION
`xfa:spec`	The version of the *XML Forms Architecture* (XFA) specification to which the rich text string complies. The following are valid values: • `2.0`, which specifies XFA version 2.0. PDF 1.5 supports this version. • `2.2`, which specifies XFA version 2.2. PDF 1.6 supports this version and the earlier versions back to XFA version 2.0. • `2.4`, which specifies XFA version 2.4. PDF 1.7 supports this version and the earlier versions back to XFA version 2.0. • `2.5`, which specifies XFA version 2.5. This value is an extension added in Acrobat 8.1. • `2.6`, which specifies XFA version 2.6. This value is an extension added in Acrobat 8.1. (Acrobat 8.1 adds support for both 2.5 and 2.6.)

Bibliography

Resources from Adobe Systems Incorporated

Add the new entry shown below. Unchanged text appears in gray.

Adobe XML Architecture specifications, available at www.adobe.com/go/xfa_ref_24_bibliography .

- *XML Architecture, XML Forms Architecture (XFA) Specification, version 2.6*
- *XML Architecture, XML Forms Architecture (XFA) Specification, version 2.5*
- *XML Architecture, XML Forms Architecture (XFA) Specification, version 2.4*
- *Adobe XML Architecture, Forms Architecture (XFA) Specification, version 2.2*

Note: Beginning with XFA 2.2, the XFA specification includes the Template Specification, the Config Specification, the XDP Specification, and all other XML specifications unique to the XML Forms Architecture (XFA).

- *Adobe XML Architecture, XML Data Package (XDP) Specification, version 2.0*
- *Adobe XML Architecture, Template Specification, version 2.0*
- *Adobe XML Architecture, XML Forms Data Format Specification, version 2.0 (Draft)*

Other additions

8.2.4 Collections

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In the first paragraph of this section, add the phrase "or a PDF package" to the second sentence, as shown below. This modification indicates the term PDF package *is equivalent to the term* portable collection.

Beginning with PDF 1.7, PDF documents can specify how a viewer application's user interface presents collections of file attachments, where the attachments are related in structure or content. Such a presentation is called a *portable collection* or a *PDF package*. The intent of portable collections is to present, sort, and search collections of related documents, such as email archives, photo collections, and engineering bid sets. There is no requirement that files in a collection have an implicit relationship or even a similarity; however, showing differentiating characteristics of related documents can be helpful for document navigation.

3 Implementation Notes

This chapter amends the implementation notes in Appendix H, "Compatibility and implementation Notes" of *PDF Reference, sixth edition, version 1.7* to describe changes introduced in Acrobat 8.1.

This guide uses italics to identify information not intended for inclusion in the PDF specification.

9.4, "Alternate Presentations"

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Modify Implementation Note 156 as shown below. Unchanged content is shown in gray.

156. Beginning with Acrobat 8.1, Acrobat no long provides support for SVG slideshows.

Acrobat 5.1 through 8.0 support SVG slideshows (MIME content type image/svg+xml). Those versions of Acrobat support the Scalable Vector Graphics (SVG) 1.0 Specification defined by the W3C (see the Bibliography). Implementation notes on support of SVG by Adobe products are available at <http://www.adobe.com/svg/>.

All resources must be either image XObjects (see Section 4.8.4, "Image Dictionaries") or embedded file streams (see Section 3.10.3, "Embedded File Streams").

- Image XObjects used for slideshows must use the DCTDecode filter and an RGB color space. Color profile information must be specified in the image XObject dictionary as well as embedded within the JPEG stream.
- Embedded audio files must be of type .wav (supported on Windows only, MIME type audio/x-wav) or .mp3 (MIME type audio/mpeg, documented at <http://www.chiariglione.org/mpeg/index.htm>).
- Embedded video must be QuickTime-compatible files of type .avi(MIME type video/ms-video) or .mov (MIME type video/quicktime, documented on Apple's Developer Connection site at <http://developer.apple.com>. To play video, a QuickTime player (version 3 or later) must be installed.