Adobe® Supplement to ISO 32000-1

BaseVersion: 1.7

ExtensionLevel: 5

Adobe® Acrobat® SDK
Version 9.1

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Adobe® Acrobat® 9.1 SDK Adobe Supplement to the ISO 32000

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Contents

1 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 document describes Adobe's extension and implementation notes relative to the ISO 32000-1:2008, Document management, Portable document format, PDF 1.7. The extensions are to the PDF document format. Adobe has submitted these extensions to ISO for inclusion into the next version of the ISO 32000 specification and they have all been accepted for part 2 of ISO 32000.

Who should read this guide?

This guide is intended for developers of applications that consume or produce PDF content.

Related documentation

The resources in this table can help you understand the material in this document. These documents, with the exception of ISO 32000, are available through the Adobe PDF Technology Center.

For information about	Resource
Adobe PDF specification	PDF Reference, sixth edition, version 1.7
Adobe 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
ISO version of the PDF Reference.	ISO 32000-1:2008

2 Transitioning the PDF Specification to ISO

Adobe has transferred responsibility for the PDF specification to the International Standards Organization (ISO) which has published ISO 32000, Document management, Portable document format, PDF 1.7 - otherwise known as ISO 32000-1:2008. Consequently, this document normatively references that document..

Extensions to the PDF specification

The language extensions described in this guide have been submitted to ISO as proposed changes to the PDF specification and the ISO 32000 committee has accept them for inclusion into part 2 of ISO 32000. The text in this document reflects the exact syntax and semantics of the ISO versions as implemented in Acrobat & Reader 9.1 and later.

In the past, Adobe identified extensions to the PDF specification with PDF version identifiers, such as PDF 1.7. Now that ISO has responsibility for the PDF specification, such identification is no longer within Adobe's control. As an alternative, Adobe will use the extensions mechanisms defined for ISO 32000-1 by which Adobe and other companies can identify extensions to the PDF specification.

The new convention lets companies and other entities identify their own extensions relative to a base version of PDF. Additionally, the convention identifies extension levels relative to that base version. For normative information on the use of base versions and extension levels in a PDF document, see ISO 32000-1:2008, 7.12.

Behavior of PDF consumers that does not support an extension

The extension convention also relies on the behavior of PDF consuming applications when they encounter PDF properties they do not recognize. The Section 2.2.8 "Extensibility" in the PDF Reference, sixth edition, version 1.7 describes this behavior as follows:

> PDF is designed to be extensible. Not only can new features be added, but applications based on earlier versions of PDF can behave reasonably when they encounter newer features that they do not understand. Appendix H describes how a PDF consumer application should behave in such cases.

And Appendix H in PDF Reference, sixth edition, version 1.7 provides this additional guidance:

> Both viewer applications and PDF have been designed to enable users to view everything in the document that the viewer application understands and to ignore or inform the user about objects not understood. The decision whether to ignore or inform the user is made on a feature-by-feature basis.

Subsequent extensions to a BaseVersion

Each subsequent company-specific extension level for a particular PDF base version is cumulative. In other words, PDF-processing applications that support the third extension level for a particular base level shall also support the first and second extension levels.

It is Adobe's intent to increment the base version extensions only with major releases of its PDF-processing applications. This document reflects that by documenting those extensions from Acrobat 9.1.

Plans related to the first version of ISO 32000

The first version of ISO 32000 conveys exactly the same requirements as the PDF Reference, sixth edition, version 1.7 but made normative through the proper usage of ISO terminology. Because of this similarity and to avoid unnecessary confusion, Adobe will continue using 1.7 as its base version until the second release of ISO 32000.

For information about changes Adobe made to PDF Reference, sixth edition, version 1.7 to become the ISO Draft International Standard (DIS), see ISO 32000 — Summary of Changes. This document is available through http://www.adobe.com/go/pdf_developer (select “PDF Specification, Sixth Edition”).

Plans related to subsequent versions of ISO 32000

After the second version of ISO 32000 is released, Adobe will use a new base version value that reflects the new Version value specified by that second version of ISO 32000. Features that are included in the second ISO version will henceforth be considered as features of the ISO version and the designation (in the PDF files) as being Adobe extensions will no longer be used.

Extensions described for the 1.7 base version that are incorporated into the second version of ISO 32000 will not be included in future versions of this document. Extensions described in a prior release that are not incorporated into ISO 32000 will remain in this document with their original base version and extension level.

The third and subsequent releases of ISO 32000 will repeat this pattern.

3 Extensions to ISO 32000-1

3.1 Transparency

The following material amends Section 11.3.5, "Blend Mode."

TABLE 136 Standard separable blend modes	
NAME	**RESULT**
ColorDodge	Brightens the backdrop color to reflect the source color. Painting with black produces no changes. $B(c_b, c_s) = \begin{cases} 0, & c_b = 0 \\ 1, & c_b \geq (1 - c_s) \\ (c_b / (1 - c_s)), & otherwise \end{cases}$
ColorBurn	Darkens the backdrop color to reflect the source color. Painting with white produces no change. $B(c_b, c_s) = \begin{cases} 1, & c_b = 1 \\ 0, & (1 - c_b) \geq c_s \\ 1 - ((1 - c_b)/c_s), & otherwise \end{cases}$

Note: These functions are formulated in a different way here than they are in ISO 32000-1. However, they produce the same results except in one special edge case. For ColorDodge, the special case is cb = 0 and cs = 1, where the result is now 0 instead of 1. For ColorBurn, the special case is cb = 1 and cs = 0, where the result is now 1 instead of 0. The rationale for the change is that for any given cb, the result should be a continuous function of cs.

3.2 Portable Collections

3.2.1 Background

This proposal clarifies the behavior of the **D** entry when its value does not match any embedded file. ISO 32000-1 currently says that if the **D** entry "is missing or in error", the root document should be shown. In retrospect, the second half of this definition was probably a mistake: if the **D** entry exists but doesn't match a file, the most likely explanation is that it did match a file at one time, but the file was removed. In that case it would be more desirable to select another file in the list than to show the root document, particularly when the root document has a compatibility message that advises the user to upgrade to the product they are currently using.

3.2.2 Proposal

In table 155 (12.3.5), the definition of the D key is amended as follows, with the new language underlined.

Table 155 - Entries in a Collections dictionary		
KEY	**TYPE**	**VALUE**
D	byte string	(*Optional*) A string that identifies an entry in the EmbeddedFiles name tree, controlling the document that is initially presented in the user interface. If the D entry is missing or in error, the initial document is the one that contains the collection dictionary. If the D entry is a valid byte string that does not match any file in the EmbeddedFiles name tree, the conforming interactive reader shall select the first item from the list of files to display in its user interface; if no files exist in the name tree, the conforming interactive reader shall display an empty preview window.

3.3 Rich Text Strings

3.3.1 Background

ISO 32000-1 currently supports a subset of XHTML for use in "Rich Text Strings" (12.7.3.4) for both annotations and form fields. A common use for such a field is to incorporate links (either entered by the author or by a future editor), but while such links may be specified by URI, the links are not treated as active. This proposal enables the standard <a> elements of XHTML to enable proper linking.

3.3.2 Proposal

The following material amends Section 12.7.3.4, "Rich Text Strings."

Table 223 - Updates to XHTML elements used in rich text string	
Element	**Description**
<a>	An anchor, or hyperlink reference, to an arbitrary URI

Table 224a - Attributes of the <a> element	
Element	**Description**
<href>	An arbitrary URI to which to link. No syntax restrictions are placed on the value of the href attribute. A conforming reader can choose what types of URIs to support and how to handle badly formed link targets or targets in unsupported syntax. In addition, named anchors are not supported.

3.4 XFA

Adobe has update the XFA (XML Forms Architecture) technology to version 3.0 and the advancements there have been implemented in Acrobat and Reader 9.1, and is recommended as the new normative reference for XFA in PDF (ISO 32000-1:2008, 12.7.8). The documentation can be found at http://partners.adobe.com/public/developer/xml/index_arch.html.