PDF Specification for IEEE Xplore®

(Part A-Core Requirements)

VERSION 4.12

MAY 2013

IEEE CONTENT ENGINEERING

◈IEEE

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DOCUMENT STATUS RECORD

Release Date	Status	Version	Amendment / Purpose
May 2013	Final	4.12	Updates specification for Acrobat X and XI.
September 2010	Final	4.11	Clarifies scanning requirements. Updates PDF spec development plans.
December 2008	Final	4.10	Adds features that were previously not allowed. Describes plans for supporting "PDF 1.7, Adobe Extension Level 3" (Acrobat 9) files.
July 2008	Final	4.02	Provides initial instructions for "PDF 1.7, Adobe Extension Level 3" (Acrobat 9) files.
May 2007	Final	4.01B	Announces the ability to test PDF 1.7 (check Acrobat 8 files.
February 2007	Final	4.01A	Addresses PitStop's ability to check Acrobat 8 files. Announces the phase out of support of PDF versions 1.0 thru 1.3 (Acrobat 1 thru 4) during 2007.
November 2006	Final	4.01	Addresses PDF 1.7 (Acrobat 8) issues.
October 2006	Final	4.0	Consolidates PDF specifications and addendum. Replaces the concepts of compliant or compatible PDF files with a simpler set of requirements. Addresses Acrobat 7 issues.
15 December 2003	Final	3.2	Divided into two parts. The first part is for authors. It defines compatible PDF files The second part is for conference organizers and vendors. It defines the requirements for compliant PDF files. This section also defines the requirements for PDF version 1.5 (Acrobat 6) and the settings (job options) file.
6 August 2003	Final	3.1	Defines requirements for PDF version 1.5 (Acrobat 6) files.
25 June 2003	Final	3.0	Combines author and technical documentation into a single specification. The technical information is in an appendix. Includes screen captures for Acrobat 5. Adjusts Acrobat 5 Compression settings. Summarizes requirements for links and bookmarks.
14 April 2003	Final	2.2B	Adjusted graphics settings to provide print production quality graphics. Clarifies how to embed fonts.
21 January 2002	Final	2.2	Summarizes requirements for Acrobat 5 compatible PDF files.
18 May 2001	Final	2.1	Summarizes PDF parameter settings; describes the requirements for scanned PDFs.
30 April 2001	Final	2.0	Initial release

1. INTRODUCTION

For ease of understanding this specification is broken into several parts. This document describes the core (minimum) requirements for "PDF Specification for IEEE Xplore®". The other parts cover (1) additional features and (2) creating and checking PDFs. These files may be accessed via links within this document or by viewing the contents of the "Supplemental Info" folder. *This document and the linked to documents define the complete "PDF Specification for IEEE Xplore®".*

The introduction of Acrobat 9 (PDF 1.7, Adobe Extension level 3) or later files brings many interesting features. However these features are specific to Adobe products. Since IEEE Xplore does not require a specific viewer or browser they are not supported in this specification. *The current requirement is that Acrobat 9 or later files must be converted to PDF 1.4 thru 1.7 (Acrobat 5 thru 8).*

2. MINIMUM PDF REQUIREMENTS

This section describes the minimum PDF files requirements for IEEE Xplore®.

Each PDF for IEEE Xplore® must have all of these characteristics.
1. Be PDF 1.4 (Acrobat 5) or later but not Acrobat 9, X, or XI.
2. Must be created with a PDF distiller[1]. Scanning is not permitted (See Section 5).
3. Embeds[2] or subsets[3] all fonts[4]. Doing so helps makes sure that the mathematics appears as intended and improves text searching in the PDF (Section 3). *Please note some TrueType fonts have a setting added by the font designer that prevents the font from being embedded or subset and should be avoided* [5].
4. Does not have a password or other security settings.
5. Does not contain any bookmarks or links[6]. The only exception to this rule is supplemental materials that are captured with the Supplemental Electronic Material Metadata Capture program.
6. Does not contain crop marks, registration marks, date stamp, time stamp, or any other mark that does not appear in the official version of the article.
7. Does not contain any PostScript that overrides the settings file.
8. Does not use PDF attachments.
9. Does not consist of a PDF Package or Merged PDF, a PDF 1.7 (Acrobat 8) feature.

Please note that the last seven requirements are not fully under Acrobat Distiller's control. Once the PDF file is created the characteristics can change. For example, Acrobat can add passwords or bookmarks.

In addition to the requirements above all PDF files must be text searchable. Please see Section 3 for details.

There are supplemental documents relating to (1) additional features and (2) creating and checking PDFs.

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[1] For conferences, Technical Activities has established a process to convert January 2005 and forward files that do not meet the requirements to IOHT (image over hidden text) PDF. Doing so however results in a delay in posting the entire conference and causes a chargeback for the additional processing.

[2] An embedded font contains all the characters in font regardless of whether they are used in the PDF. Such a font is fully editable.

[3] A subset font contains only those characters used in the PDF file. A PDF with subset fonts may not fully editable.

[4] To embed all fonts, including the base fonts, may require informing the PDF distiller about the location of the fonts. Please see the PDF distiller help files or documentation for more information. In addition, for best results do not embed or subset fonts in graphics files.

[5] Once IEEE receives a PDF file without embedded fonts nothing can be done. Using these fonts may delay posting the issue or possibly cause the paper not to be included in IEEE Xplore®.

[6] Refer to "*Submission Guidelines for IEEE Xplore® PDF Files with Supplemental Electronic Material*" for an overview. The metadata capture program works only with PCs.

3. PDF SEARCHING

PDF text searching is a requirement because it improves discoverability online and electronically. The best way to ensure this is if the PDF contains embedded fonts. Doing so also helps ensure that the mathematics appear correctly. Such fonts must use one of the following standard PDF font encodings.

1. MacRoman or Roman
2. WinAnsi or Ansi
3. MacExpert or Expert
4. Built-in
5. Standard
6. PDFDoc

If using Acrobat version 5 please see creating and checking PDFs to check the font encoding in Part C. Otherwise, PDF files can be checked by viewing the Fonts tab of the Document Properties screen in Acrobat.

PDF files created with TeX, LaTeX, and PostScript Type 3 fonts are generally not searchable[7]. So it is best to use these fonts only when necessary. However, text created with TeX or LaTeX is usually searchable in PDF format.

4. INSTRUCTIONS FOR FILES COMPATIBLE WITH ACROBAT 9.X (PDF 1.7, ADOBE EXTENSION LEVEL 3) AND LATER

Since IEEE can't guarantee that all users of IEEE Xplore can view these new formats the PDF files may not be stored in their native format. Instead files created in "PDF 1.7, Adobe Extension Level 3" (Acrobat 9.x) or later formats must be saved as PDF 1.4 thru 1.7 (Acrobat 5 thru 8). PDF version 1.6 (Acrobat 7) is the recommended viewer (reader) for IEEE Xplore®. In all other ways "PDF 1.7, Adobe Extension Level 3" (Acrobat 9.x) or later files must meet the other requirements contained in this document. This requirement applies to Acrobat 9, X, and XI or similar files.

5. SCANNED PDF EXCEPTIONS IN IEEE XPLORE®

Scanned PDF files[8] are not allowed in IEEE Xplore® unless they fall into one of the exceptions below.

1. If the publication is a journal, magazine, or standard originally published prior to 1988.
2. If the publication is a conference held prior to 2005.
3. If the publication is part of an IEEE recognized digitization project.

In all other cases the files will not be loaded into IEEE Xplore®.

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[7] PostScript Type 1 versions of these fonts are readily available on the web at CTAN (Comprehensive TeX Archive Network).
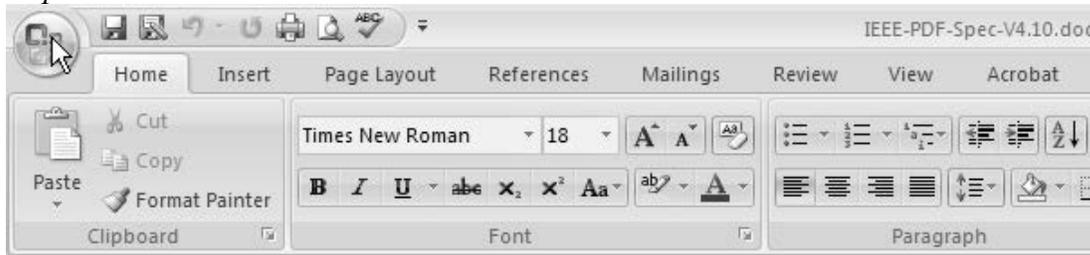
[8] Scanned PDFs must have their fonts embedded or subset in order to pass the PDF QA process.
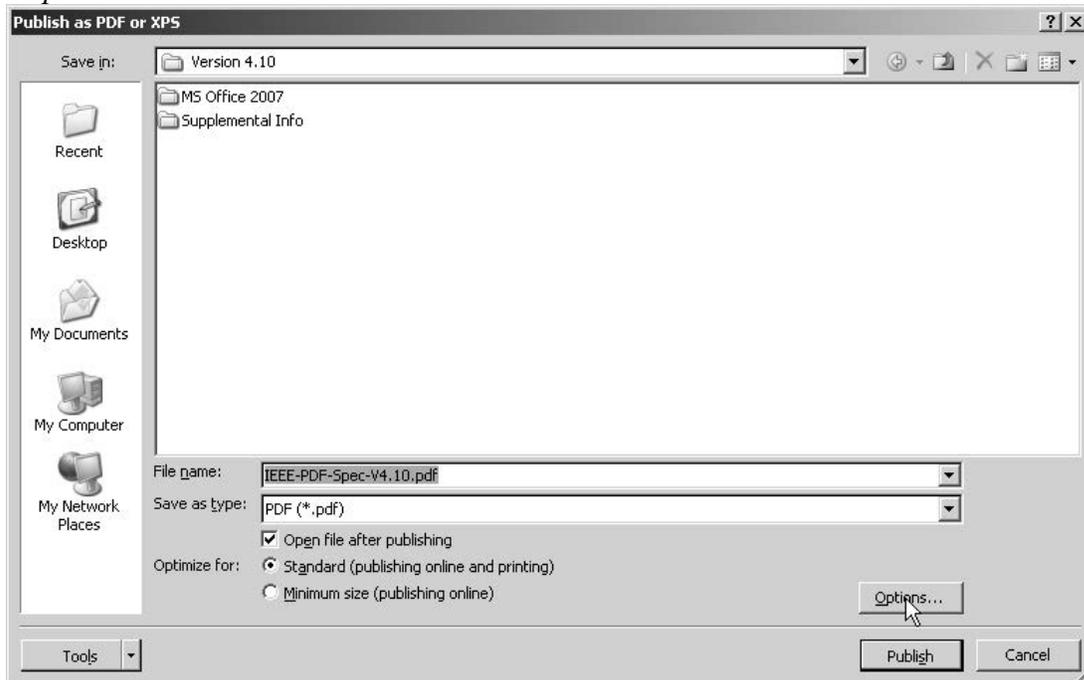
6. PDF ENHANCEMENTS

The following features are permitted in IEEE Xplore® PDF files.

1. PDFs files may use either JBIG or JPEG2000 compression. This will be useful for PDFs that don't meet the compatibility requirements. The resulting scanned files will be closer in size to a distilled PDF. These compression algorithms may be used anywhere they are permitted under the PDF reference published by Adobe Systems for PDF versions 1.4 thru 1.7[9]. *Use of this feature requires a reader that can view PDF 1.5 or later files.*

2. Files created using Microsoft Office 2007 and 2010 built-in PDF creation capability are supported as long as the right options are selected. *By default they are not.* Please make sure that the "ISO 19005-1 compliant (PDF/A)" option is checked so that the font are embedded and subset[10]. The following screen captures show the process from clicking on the "Office Button" to selecting the "ISO 19005-1 compliant (PDF/A)" checkox. The arrow shows where to click.

Step 1:

Step 2:

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[9] Acrobat 9 and later files are not supported at this time.

[10] If a TrueType font is not embedded or subset with this option chosen it is likely due to a setting in the TrueType font. Please reformat the problem text with a different font.

Step 3: