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# Simplified Requirements for Creating PDF Files for IEEE Xplore<sup>®</sup>

## Introduction

This document summarizes how to create IEEE Xplore<sup>®</sup> compatible PDF files. To do so requires attention to (1) how the manuscript is created, (2) how the files are converted to PDF (Acrobat is used as an example), and (3) how the fonts are embedded and subsetted.

## Tips for Creating the Manuscript

### Graphics

- The manuscript's graphics should have resolution of 600dpi for monochrome, 300 dpi for grayscale, and 300 dpi for color.
- Graphics should be inserted into the manuscript file rather than using cutting and pasting.
- Do not link to a graphic. Instead, insert the graphic into the manuscript.

### Fonts

- The manuscript must use fonts that allow embedding and subsetting (including the base fonts). Failure to embed and subset fonts is the biggest obstacle to PDF compatibility with IEEE Xplore<sup>®</sup>.
  - All Type 1 fonts are embeddable.
  - Only some TrueType fonts are embeddable.
  - Open Type fonts are acceptable as long as they are embedded subset.
- Do not embed fonts in a graphic file.
- The next two pages show, as an example, how to check the fonts using Acrobat Reader or Acrobat.

## Tips for Creating PDF Files for IEEE Xplore

- An electronic file containing the complete Distiller settings (job options) files for Acrobat 4 thru Acrobat 7 can be downloaded from [www.ieee.org/confpubcenter](http://www.ieee.org/confpubcenter). The download includes instructions for installing the settings files.
- **DO NOT** use password protection in the PDF file.
- All fonts, including the standard (base) fonts, must be embedded and subsetted in the PDF. *If using one of the job options files from [www.ieee.org/confpubcenter](http://www.ieee.org/confpubcenter) a PDF file is not created unless all the fonts are embedded and subsetted.*
- In “Settings ->Job Options ->Compression” or “Settings ->Edit Adobe PDF Settings ->Images” of Distiller set the downsampling resolution to 600 dpi for monochrome, 300 dpi for grayscale, and 300 dpi for color<sup>1</sup>.

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<sup>1</sup> The complete compression settings are as follows. For grayscale and color images: (1) Resampling: Bicubic downsampling at 300 dpi, (2) Compression: JPEG, and (3) Quality: Medium. For monochrome images: (1) Resampling: Bicubic downsampling at 600dpi, and (2) Compression: CCITT Group 4. In Acrobat 7 the policy for all images is 36 pixels per inch and “Warn and continue.”

# How to Check the Fonts

Adobe Acrobat users can check for font embedding and subsetting by following the steps below. Failure to embed and subset fonts is the biggest obstacle to PDF compatibility with IEEE Xplore<sup>®</sup>.

## Using Acrobat or the Acrobat Reader for Acrobat 4 and 5<sup>2</sup>

Follow the steps below with either Acrobat or the Acrobat Reader to check if all the fonts are successfully embedded and subsetted.

1. (Skip this step if using the Acrobat Reader) Under the View menu, be sure that “Use local fonts” is not checked.
2. On the Print panel, check “Print to file”. This will cause Acrobat to try to assign fonts to all the fonts in the document.
3. Print the file.
4. Go to Document Properties > Fonts
5. Click on the “List all fonts” button
6. (Note: Each column in the screen shots below is numbered. The numbers aid in understanding the following description.) In the Font Info panel, column one gives the original font name. Column two gives the font type (i.e., Type 1 or TrueType). Column three is not relevant to this check. In column four (“Used Font”), it should say "Embedded Subset". Column five (“Type”) must match column two.

Sample Screen: Fonts are OK

Original Font ①	Type ②	Encoding ③	Used Font ④	Type ⑤
ArialBlack	TrueType	Windows	Embedded Subset	TrueType
Helvetica	Type 1	Windows	Embedded Subset	Type 1
Tahoma	TrueType	Windows	Embedded Subset	TrueType
Times-Roman	Type 1	Windows	Embedded Subset	Type 1

Sample Screen: Fonts are NOT OK

<b>Fonts are NOT OK</b>	<table border="1"> <thead> <tr> <th>Original Font ①</th> <th>Type ②</th> <th>Encoding ③</th> <th>Used Font ④</th> <th>Type ⑤</th> </tr> </thead> <tbody> <tr> <td>ArialBlack</td> <td>TrueType</td> <td>Windows</td> <td>Embedded</td> <td>TrueType</td> </tr> <tr> <td>Helvetica</td> <td>Type 1</td> <td>Windows</td> <td>Embedded</td> <td>Type 1</td> </tr> <tr> <td>Tahoma</td> <td>TrueType</td> <td>Windows</td> <td>Embedded</td> <td>TrueType</td> </tr> <tr> <td>Times-Roman</td> <td>Type 1</td> <td>Windows</td> <td>Embedded</td> <td>Type 1</td> </tr> </tbody> </table>					Original Font ①	Type ②	Encoding ③	Used Font ④	Type ⑤	ArialBlack	TrueType	Windows	Embedded	TrueType	Helvetica	Type 1	Windows	Embedded	Type 1	Tahoma	TrueType	Windows	Embedded	TrueType	Times-Roman	Type 1	Windows	Embedded	Type 1	<b>Reason: Fonts are embedded but not subsetted.</b>
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<sup>2</sup> The free Acrobat Reader is available at [www.adobe.com/products/acrobat/readstep2.html](http://www.adobe.com/products/acrobat/readstep2.html).

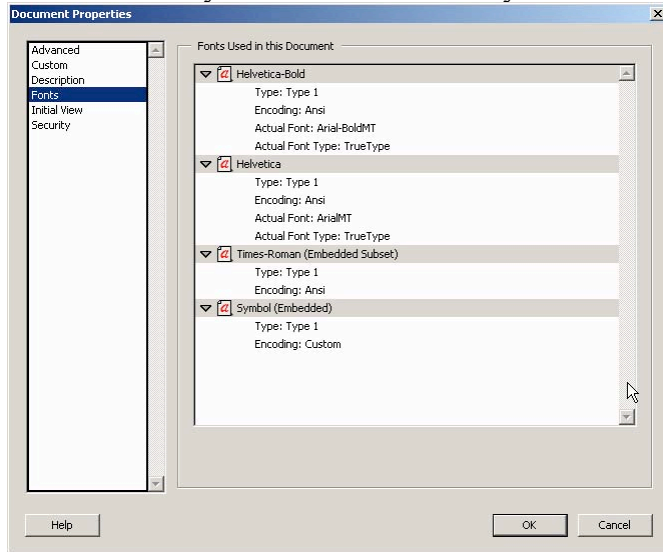
## Using Acrobat or the Acrobat Reader for Acrobat 6 and 7<sup>3</sup>

The procedure for checking fonts in Acrobat 6 and 7 is easier than in earlier versions of Acrobat. To determine if the fonts are embedded and subsetted, go to “Files->Document Properties->Fonts” and scroll the list. Properly embedded and subsetted fonts will say (Embedded Subset) after the font name. The next two sections show the corresponding screens for Acrobat 6 and Acrobat 7.

### *Acrobat 6 Document Properties Screen for Fonts*

In the screen shot below only Times-Roman is embedded and subsetted correctly. The other fonts are not Xplore compatible as explained below.

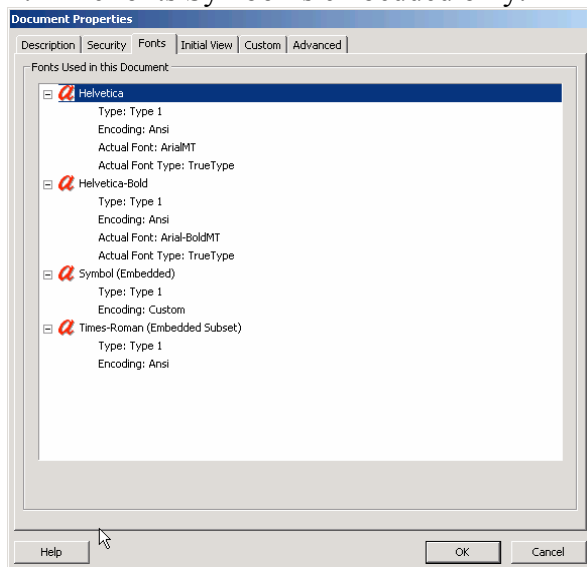
1. The fonts Helvetica-Bold and Helvetica are neither embedded nor subsetted.
2. The fonts Symbol is embedded only.



### *Acrobat 7 Document Properties Screen for Fonts*

In the screen shot below only Times-Roman is embedded and subsetted correctly. The other fonts are not Xplore compatible as explained below.

3. The fonts Helvetica-Bold and Helvetica are neither embedded nor subsetted.
4. The fonts Symbol is embedded only.



<sup>3</sup> The free Acrobat Reader is available at [www.adobe.com/products/acrobat/readstep2.html](http://www.adobe.com/products/acrobat/readstep2.html).