IEEE REQUIREMENTS
FOR
PDF DOCUMENTS

VERSION 2.2

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IEEE CONTENT ENGINEERING
XPLORESTDS@IEEE.ORG

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DOCUMENT STATUS RECORD

Release Date	Status	Version	Amendment / Purpose
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   SUMMARY OF PDF SETTINGS

This document is both a specification for IEEE Xplore compliant PDF files as well as suggestions as to how best create them. Whenever possible the PDF files must be created from either the application or PostScript files. When these files are not available the PDF file is created from scans of each page. The settings for both of these cases are summarized below.

1.1   PDF Settings for PDF Files Created from Application or PostScript Files

Compatibility: Acrobat 4
File Format: Binary
Optimize PDF: Yes
Generate Thumbnails: Yes
Resolution: 600 dpi

Color and Grayscale Images: Bicubic Downsampling at 144dpi
Compression for Color and Grayscale Images: JPEG/Medium Quality

Monochrome Images: Bicubic Downsampling at 300dpi
Compression for Monochrome Images: CCITT Group 4

Compress Text and Line Art: Yes

Subset all Font if less than 99% of the Font is used. Otherwise embed the entire Font.

Color Management: No. All colors remain in the original color space or model.
Preserve any Overprint, Under Color Removal (UCR), Black Generation, and Halftone information from the application or PostScript files.

Preserve the PostScript Level 2 copypage Semantics. Preserving this setting gives maximum flexibility when viewing and printing the PDF file.

In general, the PostScript code must not override the PDF creation settings. If the PostScript files override the PDF creation settings the resultant files must fully comply with this specification.

1.2   PDF Settings for PDF Files Created from Scans

PDF files that are created from scans are image only files (the text is not searchable). Thus, these files are simply a collection of page images that have been converted to the PDF format. For this reason this method of creating PDF files should be avoided if at all possible.

Pages must be scanned at 300dpi and in the appropriate Image Mode (e.g., black and white, grayscale, color, etc.). Scanning in the inappropriate Image Mode will make the PDF file larger than is necessary and slower to download.

2   INTRODUCTION

This document describes the required settings for creating Adobe Acrobat PDF (Portable Document Format) files for IEEE Xplore. It is intended for use by content providers with knowledge and experience in the wholesale production of PDF files. It is not intended for use by authors wishing to submit material to IEEE. Xplore content providers are responsible for ensuring that PDFs delivered to Xplore are in full compliance with the requirements set forth in this specification.

The settings in this specification are intended to optimize PDF file size and produce reasonable quality files that download quickly. This is accomplished through a combination of graphic compression settings, downsampling settings, font embedding strategies, and optimization of the PDF file. It is assumed that PDFs are created using Adobe Acrobat version 4.x. *Other means for producing PDFs are acceptable provided the resultant files comply with all the requirements set forth in this specification.*

3   ORGANIZATION OF THIS SPECIFICATION

This specification is organized as a series of checklists. Each checklist corresponds to the tabs found in Acrobat under "Settings→ Job Options". For example, "**General Settings**" represents the "General" tab. Under each tab is a listing of all the settings for the tab. After each setting is its value. For example, under "**Compression Settings"** is a setting "Compress Text and Line Art" which should be set. "Compress Text and Line Art: Yes" represents this in the checklist. In general, if a setting should be turned on it is followed by "Yes". If a setting should be turned off it is followed by "No". A few settings require a numerical value. For example the setting "Compatibility" should have a value of "4.0" (under "**General Settings**").

4   GENERAL REQUIREMENTS FOR APPLICATION, POSTSCRIPT, AND PDF FILES

4.1   General Page Characteristics (Application, PostScript, and PDF Files)

The pages in a PDF file must not contain crop marks, registration marks, date stamps, time stamps, or any other mark that does not appear in the published version. Page size must be 8.5″ x 11″.

4.2   Fonts (Application, PostScript, and PDF Files)

PDF files must contain only PostScript or TrueType fonts or a combination of the two. In order for the PDF files to match the printed version all fonts must be properly embedded. Specifically, the application program must embed the fonts in the PostScript file, (2) Acrobat must be properly configured to embed fonts, and (3) Acrobat must have access to the fonts.

To properly embed fonts the following items in the Acrobat "Fonts" tab must be selected (i.e., checked):
1. Embed All Fonts
2. Subset All Embedded Fonts Below

(If it is unclear that fonts will be properly embedded in a PDF file change the "Fonts" tab so that "when embedding fails" the job is canceled prior to Distilling the PostScript file.) Refer to the Acrobat documentation for specific information regarding accessing fonts.

4.3   Graphics and Figures (Application Files)

Graphics used in the source application must have resolutions in excess of that given in this specification (see Sections 7.2.1,7.2.2, and 7.2.3).

4.4   Security

All security options must be turned off and no passwords should be assigned.

5   REQUIREMENTS FOR PDF FILES CREATED FROM SCANS (SCANNED PDFs)

PDF files that are created from scans are image only files (the text is not searchable). For this reason Scanned PDFs are created only when the Original Application or PostScript files are not available. Each page is scanned at 300dpi and in the proper Image Mode. For instance, if a group of pages do not contain color the resultant PDF file will download faster and is much smaller if the pages are scanned as black and white instead of as color.

It is assumed that the "Import→Scan" command in Adobe Acrobat 4 is used to create a Scanned PDF file. If other means for producing Scanned PDFs are used the resultant files must be the same as those provided by "Import→Scan" command of Adobe Acrobat 4. Such a file is simply a series of images stored in a single file. As long as there is no additional information in the PDF file no specific settings are required other than scanning at the proper resolution and mode.

6   REQUIREMENTS FOR PDF CREATED USING ACROBAT 5.X OR COMPATIBLE SOFTWARE

PDF files may be created with Acrobat 5 or compatible software provided that the PDF files meet all the requirements in this document. Files created with Acrobat 5 must be compatible with Acrobat 4.

7   CHECKLIST OF ACROBAT 4.X DISTILLER SETTINGS

7.1   General Settings

Compatibility: 4.0
ASCII Format: No
Optimize PDF: Yes
Generate Thumbnails: Yes
Resolution: 600 dpi
Binding: Left

7.2   Compression Settings

"Automatic Compression" should not be selected for Color, Grayscale, and Monochrome Images. The following compression settings are required.

7.2.1   Color Bit Map Images
Resample/Downsample: Bicubic at 144 dpi
Compression: JPEG
Quality: Medium

7.2.2   Grayscale Bit Map Images
Resample/Downsample: Bicubic at 144 dpi
Compression: JPEG
Quality: Medium

7.2.3   Monochrome Bit Map Images
Resample/Downsample: Bicubic at 300 dpi
Compression: CCITT Group 4
Compress Text and Line Art: Yes

7.3   Font Settings

Embed all fonts: Yes
Maximum Subset %: 99
When embedding fails: Warn and Continue (optional)
Always embed list: None
Never embed list: None

7.4   Color Settings

7.4.1   Conversion
Leave Color Unchanged: Yes

7.4.2   Options
Preserve Overprint settings: Yes
Under Color Removal/Black Generation: Yes
Transfer Function: No
Preserve Halftone Screen Information: Yes

7.5   Advanced Settings

7.5.1   Options
Use Prologue.ps and Epilogue.ps: No
Allow PostScript to Override Job Options: No
Preserve Level 2 copypage Semantics: Yes
Save Portable Job Ticket inside PDF file: No

7.5.2   Document Structuring Conventions (DSC)
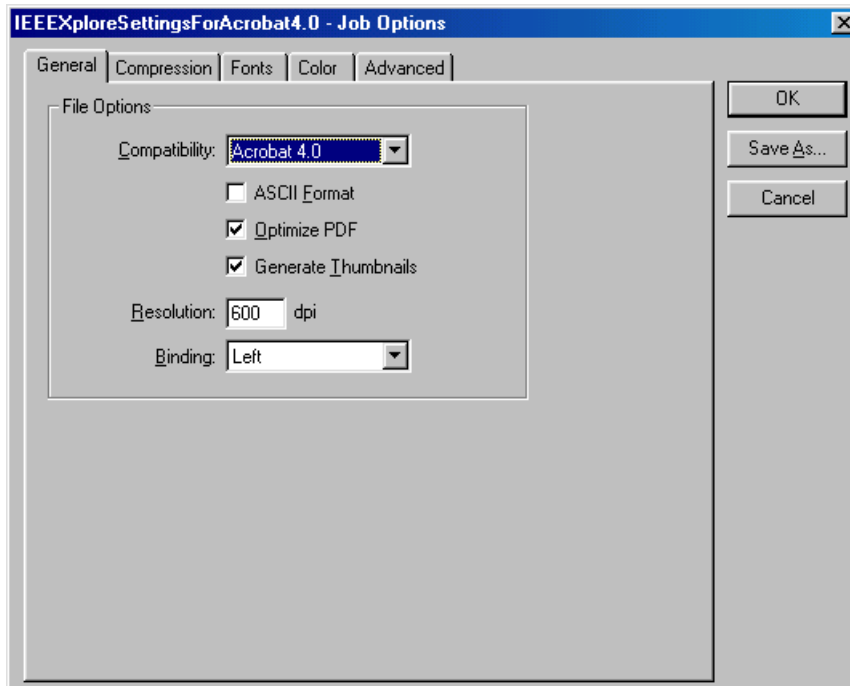Process DSC Comments: No

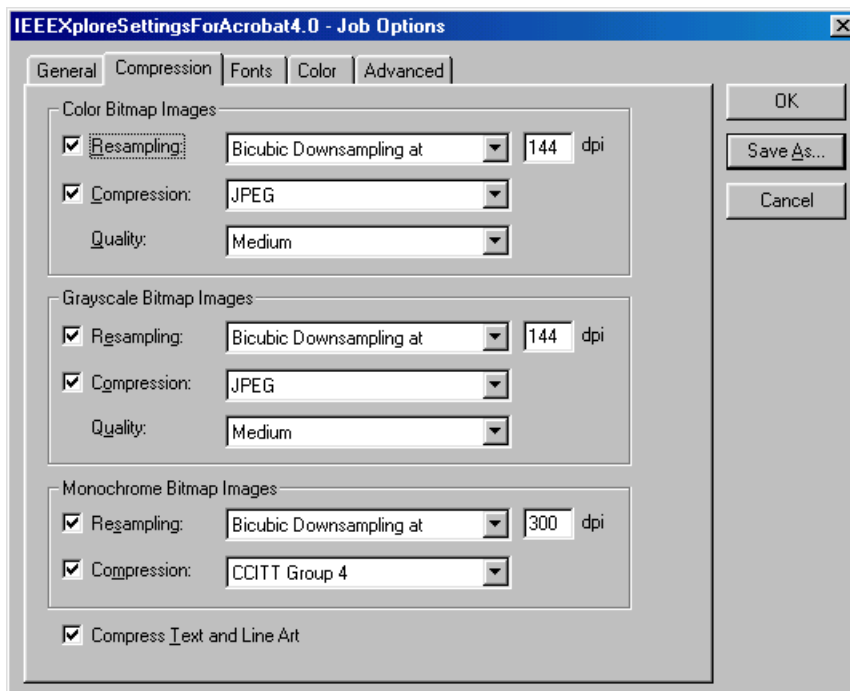7.5.3   Default Page Size
Width: 612.0
Length: 792.0
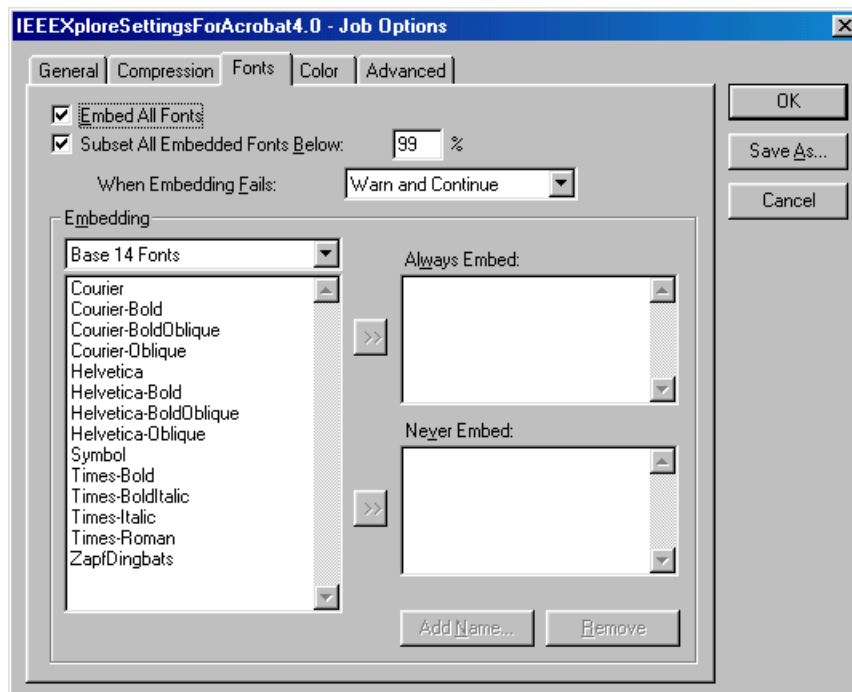Units: Point

8   SCREEN CAPTURES OF ACROBAT DISTILLER 4.X

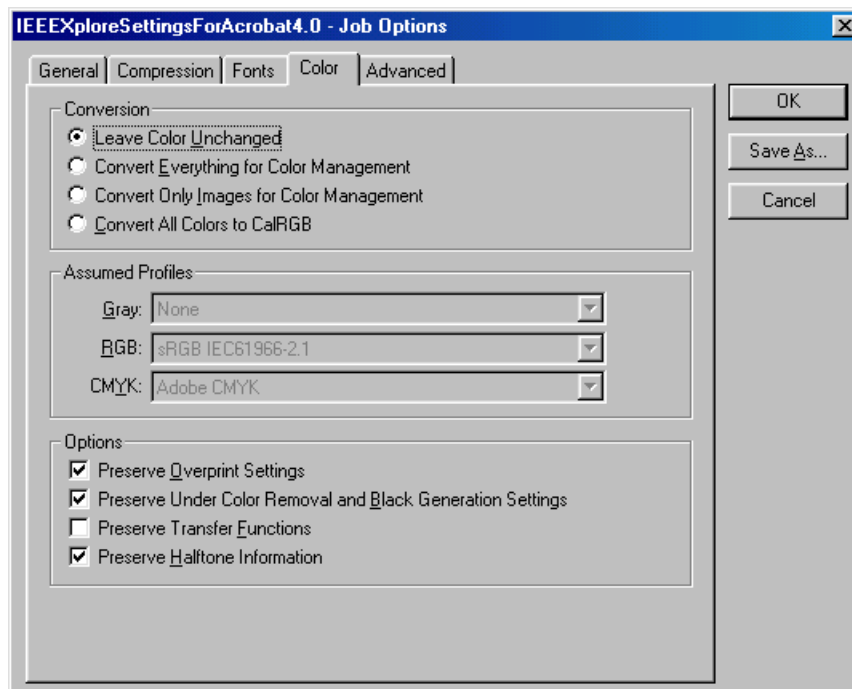### 8.1   General Options

8.2   Compression Options

8.3 Font Options

8.4 Color Options

8.5   Advanced Options