Portable Document Format Specifications

Revision History

Date	Version	Summary of Changes
2005-04-08	1.0	Initial version
2008-06-04	2.0	Changed *"Bookmarks* and *Page"* to *"Bookmarks Panel and Page"* in Open Dialog Box section

PORTABLE DOCUMENT FORMAT SPECIFICATIONS

These specifications are for submitting documents in Portable Document Format (PDF).

VERSION

Use PDF Version 1.4. PDF version 1.4 is for use with Adobe Acrobat 5.0 or higher[1]. No additional software should be needed to read and navigate the PDF files.

FONTS

Embed fonts. PDF viewing software automatically substitutes a font to display text if the font used to create the text is unavailable on the reviewer's computer. In some cases, font substitution can occur even when the fonts are available. For example, Helvetica or Times are substituted even if available on the reviewer's computer. Font substitution can affect a document's appearance and structure, and in some cases it can affect the information conveyed by a document. Font availability is not guaranteed. Font availability to the reviewer is ensured if all fonts are embedded. When fonts are embedded, all characters for the font should be included not just a subset of the fonts being used in the document.

Limit fonts to those listed in Table 1. Font embedding does not always solve the problems that occur when a reviewer tries to paste text from a PDF document into another software format. If the font is not available on the reviewer's computer, font substitution results even if the fonts are embedded. This problem is avoided if the fonts are restricted to those listed in Table 1.

Table 1: List of Fonts

Font type	Font name
San Serif	AdobeSansMM (Adobe Sans Multiple Master)
	Arial BolitaMT (Arial Bold Italic (From Monotype))
	ArialBolMT (Arial Bold Monotype)
	ArialtaMT Arial Italic (Monotype)
	ArialMT Arial (Monotype)
Non proportional	Couri (Courier)
	CouriBol (Courier Bold)
	CourriBolObl (Courier Bold Oblique)
Serif	AdobeSerifMM (Adobe Serif Multiple Masters)
	TimesNewRomPSBolitaMT (Times New Roman Bold Italic)
	TimesNewRomPSBolMT (Times New Roman Bold)
	TimesNewRomPSItaMT (Times New Roman Italic)
	TimesNewRomPSMT (Times New Roman)

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[1] It should be noted that Acrobat 6 and 7 use pdfa 1.4.

	TimesNewRoman
Other	Symbo (Symbol)
	ZapfDin (Zapf Dingbats)

Font size ranges from 9 to 12 points. Times New Roman, 12-point font is recommended for reading narrative text. When choosing a point size for tables, a balance should be made between providing sufficient information on a single page that may facilitate data comparisons while still achieving a point size that remains legible. Generally, point sizes 9-10 are recommended for tables; smaller point sizes should be avoided. Ten point fonts are recommended for footnotes.

Black is the recommended font color except that blue can be used for hypertext links. Light colors do not print well on grayscale printers. The latter can be tested prior to submission by printing sample pages from the document using a grayscale printer.

PAGE ORIENTATION

Save the page orientation for proper viewing and printing within the document. Proper page orientation eliminates the need for reviewers to rotate pages. For example, setting page orientation of landscape pages to landscape prior to saving the PDF document in final form ensures a correct page presentation.

Page Size and Margins

Set up the print area for pages to fit on a sheet of paper that is 8.5 inches by 11 inches. A margin of at least ¾ of an inch on the left side of page avoids obscuring information when pages are subsequently printed and bound. Setting the margin for at least 3/8 of an inch on the other sides is sufficient. For pages in landscape orientation, a 3/4 of an inch at the top allows more information to be displayed legibly on the page. Header and footer information should appear within these same margins (i.e., within 3/8 of an inch of the edge of the 8.5 by 11 inch page), so the text will not be lost upon printing or being bound. These margins allow printing on A4 as well. Oversized documents (e.g., CAD drawings) should be created to their actual page size.

SOURCE OF ELECTRONIC DOCUMENT

Avoid image based PDF files whenever possible. PDF documents created directly from an electronic source such as a word processing file provides many advantages over PDF documents created by scanning paper documents. Scanned documents are more difficult to read and do not allow the reviewer to search or copy and paste text for editing in other documents.

METHODS FOR CREATING PDF DOCUMENTS AND IMAGES

Use the dpi settings in Table 2 for scanning documents. Scanned documents scanned at a resolution of 300 dots per inch (dpi) ensure that the pages of the document are legible both on the computer screen and when printed and, at the same time, minimize the file size. A resolution of 300 dots per inch (dpi) is recommended to balance legibility and file size. The use of grayscale

and color significantly increases the file size and is used only when then these features improve the reviewability of the material. After scanning, avoid resampling to a lower resolution. A captured image should not be subjected to nonuniform scaling (i.e., sizing). See the following table for resolutions for various images.

Table 2: Scanning Resolution

Document type	Resolution
Handwritten notes	300 dpi (black ink)
Plotter output graphics	300 dpi
Photographs – black and white	600 dpi (8 bit gray scale)
Photographs - color	600 dpi (24 bit RGB)
Gels and karyotypes	600 dpi (8 bit grayscale depth)
High pressure liquid chromatography	300 dpi

IMAGE COMPRESSION TO REDUCE FILE SIZE

File compression methods include Zip/Flate and CCITT Group 4. File compression is a method for reducing file size. Some methods of compression can result in loss of data and can introduce compression artifacts that affect the reviewability of the information. The following two methods provide lossless compression.

- Zip/Flate (one technique with two names) for lossless compression of color and grayscale images is specified in Internet RFC 1950 and RFC 1951.

- CCITT Group 4 Fax compression technique recommendations for lossless compression of black and white images is specified in T.6 (1988) - *Facsimile coding schemes and coding control functions for Group 4 facsimile apparatus.*

IMAGE COLOR MATCHING

Because color varies from monitor to monitor, it is difficult to ensure that the reviewer will see exactly the same color as in the actual image. However, for printing, there is more control over the color by using CMYK (Cyan, Yellow, Magenta, Black) color model as opposed to the RGB model. Pantone Matching using the color profile provided by CMYK ensure color consistency for printing. The International Color Consortium (ICC) color profile specification is used when PDF documents are printed.

PDF documents do not need embedded thumbnails.

HYPERTEXT LINKING AND BOOKMARKS IN TEXT AND TABLE OF CONTENTS

Hypertext links and bookmarks improve navigation through PDF documents. For text, hypertext links throughout the body of the document to supporting annotations, related sections, references, appendices, tables, or figures that are not located on the same page as the narrative text are helpful to improve navigation efficiency. Hypertext links in text can be designated by

rectangles using thin lines or by blue text. A consistent method in a document avoids confusion. Relative paths when creating hypertext linking minimizes the loss of hyperlink functionality when folders are moved between disk drives. Both absolute links that reference specific drives and root directories do not work once the submission is loaded onto network servers are to be avoided.

The document table of contents helps the reviewer navigate to the information of interest within the document that is not provided in the submission table of contents. For documents with a table of contents, bookmarks and hypertext links for each item listed in the table of contents including all tables, figures, publications, other references, and appendices are essential for navigation through documents. The use of invisible rectangles and blue text in the table of contents for hypertext links avoids obscuring text. Other help for navigation includes a bookmark hierarchy identical to the table of contents up to 4 levels in the hierarchy.

When creating bookmarks and hyperlinks, setting the magnification setting *Inherit Zoom* so that the destination page displays at the same magnification level that the reviewer is using for the rest of the document helps with the review.

PAGE NUMBERING

In general, it is easier to navigate through an electronic document if the page numbers for the document and the PDF file are the same with the initial page of the document numbered as page one. There is an exception when a document is split because of its size (e.g., > 100 MB) and the second or subsequent file is numbered consecutively to that of the first or preceding file.

OPEN DIALOG BOX

Set the initial view of the PDF files to Bookmarks and Page. The open dialog box sets the document view when the file is opened. Set the initial view of the PDF files to *Bookmarks Panel and Page* to help with the ease of review. If there are no bookmarks, the initial view is set as *Page* only. *Magnification* and *Page Layout* is set to default.

NAMING PDF FILES

Use lower case characters and avoid using special characters except hyphens in file names. Special characters to avoid include punctuation, underscore, spaces, or other nonalphanumeric symbols (e.g., \ / : * ? < > | " % # +) . See other specifications for name length limitations.