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Document management applications — Raster image transport and storage —

Part 1: Use of ISO 32000 (PDF/R-1)

*Applications de gestion de documents — Transport et stockage des
images tramées —*

Partie 1: Utilisation de l'ISO 32000 (PDF/R-1)



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 171, *Document management applications*, Subcommittee SC 2, *Document file formats, EDMS systems and authenticity of information*.

This corrected version of ISO 23504-1:2020 incorporates the following corrections:

- Angled brackets inserted around 'total height' in the numerator of the second formula in A.4;
- ']' added to the line before '/Whitepoint' in A.8.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document describes PDF/R (Raster), a strict subset of the PDF file format, for storing, transporting and exchanging multi-page raster-image documents, especially scanned documents and photographs. PDF/R provides the portability of PDF while offering the core functionality of TIFF. Bitonal, grayscale and RGB images are supported. Compression options include JPEG, lossless CCITT Group 4 Fax and uncompressed.

This document describes the restrictions that differentiate a PDF/R file from a standard PDF file. Additionally, it specifies (see [Clause 5](#)) that a comment is used to identify files claiming to be PDF/R files. There is no intention herein to claim any intellectual property that is not present in the existing PDF standard, nor claim any IP that is covered therein.

PDF/R is intended to be a standard format for storing, transporting and exchanging scanned documents. As a subset of PDF, it takes advantage of the widespread support for viewing, printing and processing PDF files. As a narrowly restricted subset of PDF, it is much simpler to generate and interpret, allowing it to replace the TIFF and JPEG file formats for capture and delivery of scanner output.

PDF/R imposes many restrictions on PDF content and layout, for the following benefits:

- files can be read and written without a full PDF parser or generator;
- files can be created efficiently from raster images;
- files can be generated using a fixed-size raster data buffer;
- images can be located and read efficiently with comparatively simple code;
- PDF/R files can be quickly and easily identified as such by software;
- PDF/R supports effective and readily available compression algorithms.

PDF/R has important advantages over the full PDF format for storing scanned documents:

- the raster image data can be recovered;
- a complex rendering engine is not required;
- it provides a precise, well-defined target, simplifying engineering design and testing.

PDF/R retains optional PDF security features useful for protecting content:

- encryption is allowed for implementations that need to protect document content at rest.

PDF/R retains optional PDF digital signature features useful for authenticating content:

- one or more digital signatures may be used for implementations that require verification of the document origin, authenticity, date or time of creation, and so on.

PDF/R has important advantages over TIFF and JPEG for storing scanned documents:

- compared to TIFF, it has far fewer and simpler variants;
- compared to TIFF, compression is simpler and better standardized and supported;
- compared to TIFF, PDF files can be natively viewed and printed on more platforms;
- unlike JPEG, it is natively multi-page and handles bitonal images.

PDF/R was created by collaboration between the TWAIN Working Group, which originated the PDF/R concept, and the PDF Association, which provided PDF technology expertise and perspective as well as means of communicating with the PDF software industry to ensure a diverse range of relevant viewpoints was represented.