



**Document management—Electronic  
document file format for long-term  
preservation**

**Part 1: Use of PDF 1.4 (PDF/A-1)**



This Australian Standard® was prepared by Committee IT-021, Records Management Systems. It was approved on behalf of the Council of Standards Australia on 10 April 2006. This Standard was published on 1 May 2006.

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The following are represented on Committee IT-021:

- Australian Society of Archivists
- Council of Australasian Archives and Records Authorities
- Department of Defence (Australia)
- Department of Education & Training (NSW)
- Department of Foreign Affairs and Trade
- Institute for Information Management
- Monash University
- National Archives of Australia
- Public Record Office Victoria
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- State Records (New South Wales)
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- BHP Billiton
- KPMG
- Recordkeeping Systems
- Sutherland Shire Council
- The University of Sydney
- NSW Department of Commerce
- Information Management Solutions
- State Record Office of WA
- AMS Imaging
- National Archives New Zealand

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STANDARDS AUSTRALIA

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OF

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Document management—Electronic document file format for long-term  
preservation

Part 1: Use of PDF 1.4 (PDF/A-1)

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## PREFACE

This Standard was prepared by the Standards Australia Committee IT-021, Records Management Systems.

A1 This Standard is identical with, and has been reproduced from ISO 19005-1:2005, *Document*  
 A2 *management—Electronic document file format for long-term preservation—Part 1: Use of*  
*PDF 1.4 (PDF/A-1)* and its corrigenda, ISO 19005-1:2005/Cor.1:2007 and ISO 19005-1:2005/Cor.2:2011, which have been added at the end of the source text.

*This Standard incorporates Amendment No. 1 (November 2007) and Amendment No. 2 (May 2017). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

The objective of this Standard is to provide guidance for Australian organizations' archival environments for long-term retention of documents.

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

Standards Australia wishes to thank the following organizations for their contribution enabling Australia's participation in the development of International Standards in the area of Records Management. International Standards in turn become national standards to be used in Australian industries:

Australian Society of Archivists

Attorney General's Department

Fuji Xerox Australia

Monash University

National Archives of Australia

Public Record Office Victoria

Records Management Association of Australia

Record Solutions

State Records NSW

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- (a) Its number appears on the cover and title page while the international standard number appears only on the cover.
- (b) In the source text 'this part of ISO 19005' should read 'this Australian Standard'.
- (c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>		<i>Australian Standard</i>	
ISO/IEC		AS ISO/IEC	
9541	Information technology—Font information interchange	4159	Information technology—Font information interchange
9541-1	Part 1: Architecture	4159.1	Part 1: Architecture
10646	Information technology—Universal multiple-octet coded character set (UCS)	4189	Information technology—Universal multiple-octet coded character set (UCS)
10646-1	Part 1: Architecture and basic multilingual plane	4189.1	Part 1: Architecture and basic multilingual plane

Only international references that have been adopted as Australian Standards have been listed.

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## INTRODUCTION

PDF is a digital format for representing documents. PDF files may be created natively in PDF form, converted from other electronic formats or digitized from paper, microform, or other hard copy format. Businesses, governments, libraries, archives and other institutions and individuals around the world use PDF to represent considerable bodies of important information. Much of this information must be kept for substantial lengths of time; some must be kept permanently. These PDF files must remain useable and accessible across multiple generations of technology. The future use of, and access to, these objects depends upon maintaining their visual appearance as well as their higher-order properties, such as the logical organization of pages, sections, and paragraphs, machine recoverable text stream in natural reading order, and a variety of administrative, preservation and descriptive metadata.

Adobe Systems Incorporated makes the PDF specification publicly available. However, the inclusive, feature-rich nature of the format requires that additional constraints be placed on its use to make it suitable for the long-term preservation of electronic documents.

The primary purpose of this part of ISO 19005 is to define a file format based on PDF, known as PDF/A, which provides a mechanism for representing electronic documents in a manner that preserves their visual appearance over time, independent of the tools and systems used for creating, storing or rendering the files.

A secondary purpose of this part of ISO 19005 is to provide a framework for recording the context and history of electronic documents in metadata within conforming files.

Another purpose of this part of ISO 19005 is to define a framework for representing the logical structure and other semantic information of electronic documents within conforming files.

These goals are accomplished by identifying the set of PDF components that may be used, and restrictions on the form of their use, within conforming PDF/A files.

By itself, PDF/A does not necessarily ensure that the visual appearance of the content accurately reflects any original source material used to create the conforming file; e.g. the process used to create a conforming file might substitute fonts, reflow text, downsample images or use lossy compression. Organizations that need to ensure that a conforming file is an accurate representation of original source material may need to impose additional requirements on the processes that generate the conforming file beyond those imposed by this part of ISO 19005. In addition, it is important for those organizations to implement policies and practices regarding the inspection of conforming files for correct visual appearance.

This part of ISO 19005 should be used as one component of an organization's electronic archival environment for long-term retention of documents. Successful implementation of this part of ISO 19005 for archival purposes depends upon:

- the retention requirements of an organization's archival environment, records management policies and procedures as specified in ISO 15489-1, [9];
- any additional requirements and conditions necessary to ensure the persistence of electronic documents and their characteristics over time, including, but not limited to, those defined by:
  - ISO 4721;
  - ISO/TR 15801, [10];
  - ISO/TR 18492, [12];
  - ISO 18509-1, [13];
  - ISO 18509-2, [14];

- quality assurance processes necessary to verify conformance with applicable requirements and conditions; e.g. an inspection regime to verify the quality and integrity of converted source data.

This part of ISO 19005 should lead to the development of various applications that read, render, write and validate conforming files. Different applications will incorporate various capabilities to prepare, interpret and process conforming files based on needs as perceived by the suppliers of those applications. However, it is important to note that a conforming application must be able to read and process appropriately all files complying with a specified conformance level.

This document has been created as Part 1 of ISO 19005 to allow the creation of future parts, which can provide compatibility with future versions of the underlying PDF specification without rendering this document or applications based on PDF Version 1.4 obsolete.

The following terms, referring to this specification or parts thereof, are recommended when referring to this specification when the full ISO name is not being used:

- “PDF/A” – a synonym for the ISO 19005 family of standards;
- “PDF/A-1” – a synonym for ISO 19005-1;
- “PDF/A-1a” – a synonym for ISO 19005-1 Level A conformance;
- “PDF/A-1b” – a synonym for ISO 19005-1 Level B conformance.

This part of ISO 19005, in conjunction with *PDF Reference* and *XMP Specification*, January 2004, provides sufficient information to interpret any conforming PDF/A file. *PDF Reference* contains a statement from Adobe Systems Incorporated concerning its intellectual property and its willingness to allow perpetual, royalty-free, non-exclusive use of that property in order to promote the use of PDF. Adobe has provided ISO with a similar statement relating to *XMP Specification*. In general, anyone may use *PDF Reference* and *XMP Specification* to create applications that read, write or otherwise process PDF/A files.

Patent claims regarding applications that read, render, write or otherwise process PDF/A files are outside the scope of this part of ISO 19005.

NPES and AIIM (accredited standards developing organizations) maintain an ongoing series of application notes for guiding developers and users of this part of ISO 19005. These application notes are available at <http://www.npes.org/standards/toolsnpes.html> and <http://www.aiim.org/pdfa/app-notes>. Both NPES and AIIM will also retain copies of the specific non-ISO normative references of this part of ISO 19005 which are publicly available electronic documents.

NOTES

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AUSTRALIAN STANDARD

# Document management — Electronic document file format for long-term preservation —

## Part 1: Use of PDF 1.4 (PDF/A-1)

### 1 Scope

This part of ISO 19005 specifies how to use the Portable Document Format (PDF) 1.4 for long-term preservation of electronic documents. It is applicable to documents containing combinations of character, raster and vector data.

This part of ISO 19005 does not apply to:

- specific processes for converting paper or electronic documents to the PDF/A format;
- specific technical design, user interface, implementation, or operational details of rendering;
- specific physical methods of storing these documents such as media and storage conditions;
- required computer hardware and/or operating systems.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 646, *Information technology — ISO 7-bit coded character set for information interchange*

NOTE 1 The character encoding defined in ISO/IEC 646 is equivalent to ANSI X3.4 (ASCII) <sup>[1]</sup> and ECMA-6 <sup>[2]</sup>.

ISO/IEC 9541-1, *Information technology — Font information interchange — Part 1: Architecture*

ISO/IEC 10646-1, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — Part 1: Architecture and Basic Multilingual Plane*

NOTE 2 The character code values defined in ISO/IEC 10646-1 are equivalent to those of Unicode <sup>[22]</sup>.

ISO 14721, *Space data and information transfer systems — Open archival information system — Reference model*

ISO 15930-4, *Graphic technology — Prepress digital data exchange using PDF — Part 4: Complete exchange of CMYK and spot colour printing data using PDF 1.4 (PDF/X-1a)*

*Date and Time Formats*, W3C Note, 15 September 1997. Available from Internet  
<<http://www.w3.org/TR/NOTE-datetime>>