AMERICAN NATIONAL STANDARD

Graphic technology — Prepress digital data exchange using PDF —

Part 6:
Complete exchange printing data suitable for colour-manage workflows using PDF 1.4 (PDF/X-3)

CGATS

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Foreword

ANSI CGATS/ISO 15930-6 is an identical adoption of ISO 15930-6:2003. ISO 15930-6 was prepared by ISO Technical Committee 130, *Graphic technology*, with the support of the ANSI Committee for Graphic Arts Technologies Standards (CGATS).

Minor edits have been made to this standard to prepare it as an ANSI CGATS Standard. No technical changes have been made.

The CGATS consensus body approved the national adoption of ISO 15930-4 for issuance as CGATS/ISO 15930 4 in accordance with the *ANSI Procedures for the National Adoption of ISO and IEC Standards as American National Standards* and the CGATS Operating Procedures.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ANSI shall not be held responsible for identifying any or all such patent rights. Neither ISO, ANSI nor CGATS shall be held responsible for identifying any or all such patent rights.

CGATS/ISO 15930 consists of the following parts under the general title *Graphic technology — Prepress digital data exchange — Use of PDF*:

Part 1: Complete exchange using CMYK data (PDF/X-1 and PDF/X-1a);

Part 3: Complete exchange suitable for colour-managed workflows (PDF/X-3);

Part 4: Complete exchange of CMYK and spot colour printing data using PDF 1.4 (PDF/X-1a);

Part 5: Partial exchange of printing data using PDF 1.4 (PDF/X-2)

Part 6: Complete exchange of printing data suitable for colour-managed workflows using PDF 1.4 (PDF/X-3)

Introduction

CGATS/ISO 15930 (all parts) defines methods for the exchange of digital data within the graphic arts industry and for the exchange of files between graphic arts establishments. It is a multi-part document where each part is intended to respond to different workflow requirements. These workflows differ in the degree of flexibility required. However, increasing flexibility can lead to the possibility of uncertainty or error. The goal throughout the various parts of CGATS/ISO 15930 has been to maintain the degree of flexibility required while minimizing the uncertainty.

Many printed documents are assemblies of partial pages and/or pages created at different locations and by different organizations. The merging of these individual elements into the final printing form and the subsequent printing may take place at different locations. Some of these elements may also be routed to multiple sites for incorporation into other documents. Each of these elements is referred to in CGATS/ISO 15930 as a compound entity.

A variety of data formats and structures are used for the creation of this type of material, but with two prevalent kinds of underlying data structures. These are vector-based data for the encoding of line art and textual information; and raster-based data for the encoding of image information, including previously rasterized line art and textual information.

Both kinds of data structures are required along with page description information in an open electronic workflow. The exchange of raster-based data using the TIFF/IT file format is defined in CGATS/ISO 12639. The subject of CGATS/ISO 15930 is a format for the exchange of object-based data where individual objects may be in either vector or raster data structures.

PDF/X-3 (Parts 3 and 6 of this standard) complements the other parts by defining a data format and its usage to permit the predictable dissemination of a compound entity to one or more locations, as colour-managed, CMYK, gray, RGB, and/or spot colour data, in a form ready for final print reproduction, by transfer of a single file. This file contains all the content information necessary to process and render the document, as intended by the sender, coded inside a single PDF file. No other parts, neither external files nor internally embedded files, are required or permitted. This exchange requires no prior knowledge of the sending and receiving environments and is sometimes referred to as "blind" exchange. It is platform- and transport-independent.

These goals are accomplished by defining a specific use of the publicly available *Adobe Portable Document Format*. In order to achieve a level of exchange that avoids any ambiguity in interpretation of the file, a limited set of PDF objects that may be used is identified and restrictions to the use, or form of use, of those objects, and/or keys within those objects are added.

This version of PDF/X-3 (Part 6 of this standard) amplifies and refines the information provided in the earlier version of PDF (Part 3 of this standard), as follows.

— The referenced version of the *Adobe Portable Document Format* has been changed from 1.3 to 1.4.

— The following features, introduced in PDF 1.4, have been disallowed in PDF/X-3:2003: JBIG2, Transparency, and Referenced PDF.

Whereas PDF/X-3 specifies the exchange of complete material, with all elements present, there are circumstances when this is not appropriate. In certain workflows, some or all of the referenced elements may be more logically present at the receiving site, or may be exchanged at a different time. These include high-resolution contone-image files, line-art files, etc. These exchanges will generally require prior agreement between sender and receiver. The requirements for such situations are addressed in PDF/X-2 (Part 5 of this standard). Other

exchanges may be more appropriately restricted to CMYK and spot colour data only. Such exchanges are addressed in PDF/X-1a (Parts 1 and 4 of this standard).

It is anticipated that a variety of products will be developed based on PDF/X, such as readers (including viewers) and writers of PDF/X files, and products that offer combinations of these features. Different products will incorporate various capabilities to prepare, interpret and process conforming files based on the application needs as perceived by the suppliers of the products. However, it is important to note that a conforming reader must be able to read and appropriately process all files conforming to a specified conformance level.

Users are cautioned that there are several different conformance levels that may be associated with PDF/X readers and writers. Two of these are generally referred to as PDF/X-3. These are defined in Parts 3 and 6 of this standard. It is recommended that these be referred to as PDF/X-3:2002 and PDF/X-3:2003, respectively. It is important to note that the print elements of a PDF/X-1a file meet all of the requirements of a PDF/X-3 file and that a PDF/X-3 reader must also read a PDF/X-1a file.

Although re-purposing of data is not a primary consideration or requirement of this part of ISO 15930, maximum flexibility will be maintained so that future requirements for re-purposing may be accommodated.

An ongoing series of *Application Notes*[5] is maintained for the guidance of developers and users of the PDF/X family of standards. These *Application Notes*, and other documents relevant to PDF/X, are available from NPES The Association for Suppliers of Printing, Publishing and Converting Technologies in the NPES Standards Workroom at <http://www.npes.org/standards/tools.html>.

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CGATS/ISO 15930-6:2004 (R2009)

Graphic technology — Prepress digital data exchange using PDF —

Part 6:
Complete exchange of printing data suitable for colour-managed workflows using PDF 1.4 (PDF/X-3)

1   Scope

This part of CGATS/ISO 15930 specifies the use of the Portable Document Format (PDF) Version 1.4 for the dissemination of complete digital data, in a single exchange, that contains all elements ready for final print reproduction. Colour-managed, CMYK, gray, RGB or spot colour data are supported.

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 15930-1:2001, *Graphic technology — Prepress digital data exchange — Use of PDF — Part 1: Complete exchange using CMYK data (PDF/X-1 and PDF/X-1a)*

ISO 15930-3:2002, *Graphic technology — Prepress digital data exchange — Use of PDF — Part 3: Complete exchange suitable for colour-managed workflows (PDF/X-3)*

ISO 15940-4:2003, *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)*

ISO 15930-5:2003, *Graphic technology — Prepress digital data exchange using PDF — Part 5: Partial exchange of printing data using PDF 1.4 (PDF/X-2)*

PDF Reference: Adobe Portable Document Format, Version 1.4, Adobe Systems Incorporated — 3rd ed. (ISBN 0-201-75839-3)

PDF Reference: Adobe Portable Document Format, Version 1.4 errata dated 2003/6/18. Available from Internet <http://partners.adobe.com/asn/acrobat/docs/PDF14errata.txt>

ICC.1:1998-09*, File Format for Color Profiles,* International Color Consortium. Available from Internet <http://www.color.org/>

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