

# What's Happening with PDF/X?

## Progress Being Made on International Level

by David McDowell, NPES/Eastman Kodak

At the recent ISO/TC130 Graphic technology meeting in Swansea Wales, considerable progress was made in the development of the international family of PDF/X standards. As reported in earlier updates, the U.S. version of PDF/X-1 was approved late last fall as CGATS.12/1-1999. This CGATS version was also balloted for ISO approval at the DIS (final approval) level as ISO 12639-1 with the title *Graphic technology—Prepress digital data exchange—Use of PDF—Part 1: Complete exchange using CMYK data.*

That ballot was approved but two significant issues were raised. The first was the need on the part of several national bodies to allow a compliance level that did not require a receiving system to support OPI. The other was the strong desire to have PDF Version 1.3 as the primary reference rather than the CGATS.12 reference to PDF 1.2 (as extended by Adobe Technical Note 5188). In response to these concerns TC130 is revising the international version of PDF/X-1 to include a "1a" compliance level that will not require OPI

and the primary reference is being changed to point to PDF 1.3. The use of PDF 1.3 as the primary reference also enabled several additional capabilities of the PDF file by the ISO version of the PDF/X-1 standard. The principal additions are

*To meet the diversity of need, and at the same time provide easily identified conformance levels, a multi-part International Standard was chosen as the approach to be used.*

DeviceN color spaces and the TrapNet annotation. In addition, sections on actions, java scripts and BX/EX operators will be added. These changes are being made and the ISO document will be sent out for re-balloting before the end of the year.

**Structure of ISO PDF/X Standards**  
At the same meeting, the overall structure of the PDF/X work at the international level was resolved among the various interest groups. In building the PDF/X family of

International Standards, the members of TC130/WG2 recognized that the needs of the printing and publishing industry varied both as a function of geography and application area (newspapers, publications, catalogs, commercial printing, etc.).

To meet this diversity of need, and at the same time provide easily identified conformance levels, a multi-part International Standard was chosen as the approach to be used. It was also recognized that the Adobe PDF file format, to which these standards are referenced, is still evolving and indi-

vidual parts of the PDF/X family of International Standard may refer to different versions of PDF, with or without extensions provided through Adobe Technical Notes.

It is the intent of TC130 to base all parts of this International Standard on defined PDF features and to only limit the set of PDF objects which may be used and/or add restrictions to the use, or form of use, of those objects, and/or keys within those objects. It is therefore expected that no part of this International

Standard will extend the defined PDF features available at the time of its publication.

The following family of documents were agreed upon as the current plan for the standardization of the use of PDF in graphic arts applications.

*ISO 15929, Graphic technology—Prepress digital data exchange—Guidelines and principles for use of PDF (referred to as Base PDF/X)*

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

*ISO 15930-2, Graphic technology—Prepress digital data exchange—Use of PDF—Part 2: Partial exchange (PDF/X-2)*

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

### **Guidelines and Principles**

ISO 15929, as its title suggests, is the umbrella document for the family and specifies the guidelines and principles for the use of the Portable Document Format (PDF). As such it becomes the basis for all parts of the PDF/X family of International Standards which will be documented in various parts of ISO 15930 or other International Standards. It is often referred to as Base PDF/X. The current goal is to move this standard into balloting at the DIS level (final approval) by the end of the year.

Some of the requirements included in ISO 15929 are:

- All PDF/X standards shall be based on the PDF file format and shall identify the particular version of PDF used as well as any modifying

*The choice of the individual International Standards prepared will be based on identified industry needs and willingness of proponents to work within TC130 to develop the necessary documents for processing and approval.*

Technical Notes or other modifying documents.

- All color data shall be explicitly defined or identified using either ICC profiles or other PDF mechanisms.

- Each member of the family shall include the GTS\_PDFXVersion key in the Info dictionary and shall define a unique value.

- Where a PDF/X standard includes more than one conformance level the GTS\_PDFXConformance key shall be used to distinguish between conformance levels.

- To minimize the number of variant implementations, unless technical reasons intervene, where different parts of the PDF/X family of standards have common detail requirements or nomenclature, those parts with later publication dates shall use the same mechanism or data format that is used for the specification of those same details in parts with earlier publication dates.

- Each PDF/X conformance level shall be identified by a name that starts with the string “PDF/X-” followed by an appropriate identifier that is unique within this family of International Standards.

While the individual definitions of the subsequent parts of the family are still being studied, it is clear that they will represent some or all of the intersections of several general requirements. A partial look at these general requirements is as follows:

- “Blind” exchange vs. exchanges requiring prior technical agreement or agreement as to capabilities required to receive and process a file;

- The requirement to have all required elements available in a single exchange vs. the ability to have some elements simply referenced and available at the receiving site or transmitted in a separate exchange;

- Exchange of CMYK data or exchange of data encoded in other color spaces;

- The requirement that the sender define the expected printed appearance vs. the requirement that the sender include “full gamut” data and the receiver be responsible for appropriate adjustment to the actual printing condition used; and

- The use of externally referenced (OPI) files for some objects vs. the requirement that all objects be encoded within the PDF file structure itself.

The choice, and priority for preparation, of the individual International Standards will be based on identified industry needs and the willingness of the proponents of those needs to work within TC130 to develop the necessary documents for processing and approval.

### **PDF/X-3**

The preparation of ISO 15930-3 (PDF/X-3), “Blind exchange suit-

# Planning for 2001

## ***IPA Marketing & Sales Conference***

January 11 - 14

Hyatt Islandia - San Diego, California

## ***Premedia 2001 Technical Seminar***

May 15 - 17

Ambassador West - Chicago (downtown), Illinois

## ***Print 2001***

September 6 - 13

McCormick Place Complex - Chicago, Illinois

## ***IPA Management Conference***

October 7 - 10

Camelback Inn - Scottsdale, Arizona

*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 this International Standard as a composite entity.*

*Whereas some workflows require the exchange of complete material with all elements present, there are occasions where 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 fonts, high resolution contone image files, or line art files. Further, evolving color management capabilities may allow elements to be exchanged more expeditiously in color spaces other than CMYK.*

It is the goal of PDF/X-2 to ensure that all elements not included in the exchange (fonts, image elements, etc.) can be uniquely identified and the exact version to be used is specified. In this way a "partial" exchange, while requiring additional communication between sender and receiver, can be as reliable as a "complete" exchange using either PDF/X-1 or PDF/X-3.

Current plans are that the preparation of PDF/X-2 will follow the work on PDF/X-1 and PDF/X-3. A goal has not been set, but it is hoped that a draft may be available by mid to late spring 2001.

### **Parting Comment**

Stay tuned for future developments. The next meeting of CGATS/SC6 is in Santa Monica, California, in early December and the TC130 is meeting in San Diego, California, in May 2001. If you want to become involved in either the CGATS or TC130 efforts, contact Mary Abbott at [mabbott@npes.org](mailto:mabbott@npes.org). **IPA**

able for color managed workflows" is well under way. Prior to the TC130 meeting in Swansea, the basic approach used in PDF/X-3 had sometimes been identified as PDF/X-M and is being driven, in part, by the needs of the European newspaper industry. The European Color Initiative (ECI) has provided requirements and input in the preparation of the current draft which will be in preliminary (CD) ballot by the end of the year.

PDF/X-3 addresses the requirements of a broad range of users in the graphics industry and tries to make the advantages of PDF available in a controlled way, without imposing unnecessary constraints that would exclude certain users from using PDF. At the same time, it makes provisions for an efficient color managed workflow without making the color management approach a mandatory option.

PDF/X-3 requires that all elements necessary for the rendition of the page or the pages are coded inside a single PDF file, and that no other parts—neither external files nor internally embedded files—are required. Where three component data (RGB) are exchanged an ICC output profile will be included to define the intended color-to-CMYK relationship.

### **PDF/X-2**

PDF/X-2, Partial exchange, started life as CGATS.12/2. Its ongoing development is still the responsibility of CGATS/SC6, working in cooperation with TC130. The preamble to PDF/X-2 describes the need as follows:

*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*