

## Standards Update

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May 2 through May 13 in London was a busy time for the graphics portion of the imaging community. During those two weeks the International Color Consortium, six Working Groups of ISO TC130 (Graphic technology), and two ad-hoc groups held meetings.

I will try to briefly summarize some of the main topics of each of these meetings and provide pointers for more information.

For lack of any better order, I will review these meetings in the sequence in which they were held so that you can get a sense of some of the interaction that occurred.

### TC130/JWG7—ISO/ICC Profile Standard.

In July of 2003, a formal agreement between the ICC and ISO was approved. This agreement enabled parallel publication of ICC specifications as both ICC documents and International Standards. A Joint Working Group (JWG7) was set up by TC130 to manage the ISO aspects of this work. This JWG included representatives of TC130, TC42 (Photography) and the ICC.

At the JWG7 meeting, held on Monday May 2 in London, the results of the DIS ballot of the ISO version of the ICC profile specification (ISO 15076-1, *Image technology colour management—Architecture, profile format, and data structure—Part 1: Based on ICC.1:2004-10*) were reviewed.

The DIS ballot was approved with no negative votes and only editorial comments. The editorial comments received were resolved by JWG7 and the final document has been forwarded to ISO central secretariat for publication.

Editorial changes introduced as part of the ISO review will be used as the basis of an Addendum to ICC.1:2004-10 to maintain compatibility between the two versions of this document. As the ICC continues the development of ICC.1, ICC approved recommended changes will be maintained in a publicly available listing on the ICC website. Whenever these ICC approved recommended changes represent a significant change to the existing published versions, both ICC.1 and ISO 15076 will be simultaneously revised to incorporate all accumulated ICC approved recommended changes.

The joint ICC/ISO publication of this document, and the agreement that enabled it to occur, represents a significant milestone for ICC and the imaging standards community.

### International Color Consortium (ICC)

The ICC met on May 2–4 at the British Standards Institute. This meeting had a very large attendance, with several representatives from the European printing and motion picture industries. There was a clear sense of urgency that color management is becoming more and more necessary, but there is still a wide gap between known technology and the ability to use it in a product.

The steering committee has recommended that the “ICC Promoters Agreement” (which states that any intellectual property that an ICC member company held that related to the ICC specification prior to 1996 would be freely available to anyone to use) be removed as a requirement of membership in the ICC. It will be balloted in the near future and should pass easily.

The reference gamut, proposed for the perceptual rendering intent, has been accepted. It is officially documented in ISO 12640-3, *Graphic Technology—Prepress digital data*

*exchange—Part 3: CIELAB standard colour image data (CIELAB/SCID).*

In discussions of color management for digital cameras, presentations showed two different approaches to encoding images from digital cameras. One encoded colorimetry of the scene while the other encoded the colorimetry of the appearance of the scene. Both approaches were used to produce very good images. However, both change the nature of the Profile Connection Space, so it was proposed that an indicator be added to identify the PCS as being scene referred, appearance referred, or standard PCS.

There was considerable interest in digital motion picture, with a number of representatives of that industry present. There were several presentations about new profiles that were created to enable digital motion picture creation workflows using ICC profiles. Although not surprising, it is notable that this group is consistently and aggressively pursuing the implementation of color management in digital motion picture.

The Graphic Arts Special Interest Group (GASIG) is one of the most active of the longer running ICC working groups. Key items of note that were discussed at this meeting are:

- The CGATS TR001 URL has been modified to a standard form and the other CMYK characterisation data entries have been prepared as a table at [www.color.org/membersonly/registry\\_table.html](http://www.color.org/membersonly/registry_table.html)
- A paper was presented on RGB workflows. In it the concept of “mid-binding” and “later-binding” workflows was introduced. In both of these workflows, color corrections were carried out in RGB. The main difference being that images were converted to CMYK prior to page assembly in the “mid-binding” workflow and after page assembly in the “later-binding” case.
- The advantages of RGB workflows were identified as better control of final separations and repurposing from archived RGB files. One application was described where product matching was performed by converting the RGB image to CIELAB and filling the a\* and b\* channels with values obtained by direct measurement of the product.
- There was a short discussion of the color management advantages that would be accrued if it were possible to have a unique output profile for each image in a PDF/X-3 workflow. Obviously this is an issue that must be addressed by Adobe, not the standards community, but as PDF is being revised it warrants consideration.

### TC130/WG2/TF2—PDF/X

WG2/TF2 is the group responsible for the PDF/X family of content data-exchange standards. They met Friday and Saturday at BSI. The task force reviewed a proposed draft for revisions of PDF/X-1a, PDF/X-2 and PDF/X-3 based on PDF 1.6, provided by CGATS SC6. After much discussion, the following key points were agreed:

- The additional value to enabling use of new features such as optional content (layers) and transparency in a CMYK-only workflow was rather small. PDF/X-1a:2003 (and even PDF/X 1a:2001) address the requirements of that workflow very well.
- Addition of support for optional content and transparency is a large step; greater than would be appropriate to treat as an update to PDF/X-3.

- While there have not yet been any implementations of PDF/X-2, there is continuing interest in some quarters, so the idea should not yet be dropped. During these discussions, other areas were identified where there would be value in omission of resources required for rendering from the exchanged file: fonts (especially CJK) and ICC profiles in the output intent.

The committee therefore agreed to work on the following:

- A new conformance level, to be known as PDF/X-4, which will allow for colour-managed workflows with optional content and transparency. This will be defined in ISO 15930-7.
- A second new conformance level, to be known as PDF/X-5. A PDF/X-5 reader must read all files that a PDF/X-4 reader must read, and must be able to accept files where one or more of the three categories of fonts, ICC profiles and XObjects are supplied externally to the main exchanged file. This will be defined in ISO 15930-8.

The two will be developed as far as possible in parallel, with the aim of balloting and publication together. Work will continue outside of meetings, with the goal of having a document ready for CD ballot at the meeting in São Paulo, Brazil, in September 2006. Publication of the resulting standard cannot, therefore, be expected before the very end of 2006, or early 2007.

Much of the discussion outside meetings will occur on the email list at [http://groups.yahoo.com/group/pdfx\\_revision](http://groups.yahoo.com/group/pdfx_revision). All interested parties are welcome to participate.

#### Industry Group—Printing Across Borders (PAB)

To insure that none of the visitors to London had time on their hands, and to take advantage of the presence of participants in the TC130 and ICC meetings, the PAB group held a meeting on Sunday May 8th.

PAB is an unofficial association of printing standards entities formed by the ECI (European Color Initiative), GRACoL (General Recommendations for Applications in Commercial Offset Lithography), and the Ghent PDF Workgroup. The initial purpose of the association is to explore ways to align international printing and print standards more closely with each other. The ultimate goal is a set of common international print standards that permit easier and more accurate exchange of files and printing across borders and processes.

Attended by nearly 50 printing industry participants, this meeting was primarily an opportunity for open discussion of the various approaches to printing process control and characterization.

A mailing list has been established for continued discussion at <http://lists.callassoftware.com/mailman/listinfo/pab>.

#### TC130/WG2—Prepress Data Exchange

WG2 met on Monday May 9th and focused on the following topics.

The ballot on ISO/CD 12640-3, *Graphic technology—Prepress digital data exchange—Part 3: CIELAB standard colour image data (CIELAB/SCID)*, closed 10 April 2005, with no negative votes. The editorial comments received were reviewed and the DIS is in preparation.

The color gamut defined in this International Standard as the basis for the synthetic and natural images is also the

gamut adopted by the ICC as the reference gamut for the perceptual rendering intent.

A new proposal for the work item relating to ISO 17972, *Graphic technology—Prepress data exchange—Colour data exchange format*, was discussed but no clear direction was established. Additional work will be done prior to the fall meeting and it is hoped that a direction can be established at that time.

ISO/DIS 12642-2, *Graphic technology—Input data for characterization of 4-colour printing—Part 2: Expanded data set*, is currently in DIS ballot, closing August 18. Comments from the DIS ballot will be addressed at the Fall meeting.

#### TC130/WG2/TF3—PPML/VDX

WG2/TF3 met on Tuesday May 10 and reviewed the comments on the DIS ballot of ISO/DIS 16612-1. *Graphic technology—Variable printing data exchange—Part 1: Using PPML 2.1 and PDF 1.4 (PPML/VDX-2004)* and completed the final draft for publication by ISO. As there were no negative votes, this document will proceed directly to publication.

#### TC130/WG3—Process Control And Related Metrology

WG3 met on Thursday and Friday May 12–13 and addressed several topics of interest to the imaging community.

The most important of these are the proposed revisions to ISO 13655, *Graphic technology—Spectral measurement and colorimetric computation for graphic arts images*, and ISO 3664, *Graphic Technology and photography—Viewing conditions*. Although ISO 13655 is the responsibility of TC 130 and ISO 3664 is assigned to TC 42, TC 130 has proposed that the revision of these document needs to be accomplished as a coordinated task.

Another item on the WG3 agenda was a proposal to revise ISO 12646, *Graphic technology—Displays for colour proofing—Characteristics and viewing conditions*. Since this document was published there have been significant advances in the display technology used by the graphics industry, particularly in the area of LCD and other flat panel displays.

#### Proof to Print Comparison

A special session was arranged by WG3 and the ICC to discuss the issues involved in Proof to Print Comparison. This session was held on Friday as a continuation of the WG3 meeting. Many of the issues discussed were introduced in the March-April issue of the IS&T Reporter and in an article in the March issue of the IPA Bulletin.

Additional follow-up is expected to be part of upcoming ICC and WG3 meetings with summaries available in the future.

#### Other Meetings

Although their agendas did not include items directly impacting the imaging community, both TC130/WG1, Terminology, and WG4, Media and materials held meetings in London during this time period.

For questions about any of these activities, suggestions for (or input to) future updates or standards questions in general, please contact the author at [mcdowell@npes.org](mailto:mcdowell@npes.org) or [mcdowell@kodak.com](mailto:mcdowell@kodak.com)