STANDARDS UPDATE

David Q. McDowell, Editor

The March-April issue of the standards update focused on a series of related standards that are being revised jointly by ISO TC130 (Graphic technology) and ISO TC42 (Photography). The three standards involved were: ISO 5 (*Photography and graphic technology—ISO standard density measurements*); ISO 3664 (*Viewing conditions—Graphic technology and photography*); and ISO 13655 (*Graphic technology—Spectral measurement and colorimetric computation for graphic arts images*).

In this issue I will review some of the other work accomplished at the recent Working Group meetings of TC130 held in Paris April 14 – 19, 2008.

A Reminder – TC130 Organization

To help you understand the various activities, and who does what to whom, a brief reminder of the organization of TC130 is appropriate. Some ISO committees organize themselves as Sub-Committees (SC) which may or may not have Working Groups (WG) within the sub-committees. Others, like TC130 simply are organized by Working Groups.

Further, when work involves more that one ISO TC, a joint activity is permitted and such joint activities are usually identified as a Joint Working Group or JWG. However, even though a JWG involves technical experts from more than one TC, it is under the supervision of one parent Technical Committee.

Currently, TC130 has five active WGs, is responsible for four JWGs and participates in four additional JWGs administered by other TCs. The lineup is as follows:

- *WG 1 Terminology*
- *WG 2 Prepress data exchange*
- *WG 3 Process control and related metrology*
- *WG 4 Media and materials*
- *WG 5 Ergonomics—Safety*
- *JWG 6 (Joint TC 130-TC 42 WG):*

Certified reference materials— STANDBY
- *JWG 7 (Joint TC 130, TC42, and ICC WG) Colour management. Maintenance of ISO version of ICC specification—ISO 15076.*
- *JWG 8 (Joint TC 130-TC 42 WG): Revision of ISO 13655*
- *JWG 9 (Joint TC 130-TC 42 WG): Development of ISO 12640-5*

The JWGs in which TC130 participates that are administered by others are:

- *TC 42/WG 21, Joint TC 42-TC 130 WG: Density measurements (Revision of ISO 5 series)*
- *TC 42/JWG 22 Joint IEC/TC 100-ISO/TC 42-TC 130 WG : Colour management*
- *TC 42/WG 23 Joint TC 42-TC 130-CIE WG: Extended colour encodings for digital image storage, manipulation and interchange*
- *TC 42/WG 24 Joint TC 42-TC 130 WG: Viewing standards (Revision of ISO 3664)*
- *TC 171/SC 2/WG 5 Joint TC 171/SC 2—TC 42—TC 46/SC 11—TC 130 WG: Document management applications—Application issues PDF/A*

A lot of interlocked activity and a lot of coordination between committees, but also an exciting program that is clearly changing the industry.

Some of the progress

For the sake of simplicity we will look at the activities by working group.

WG 1 Terminology

WG1 currently is focused on two documents. The multi-part ISO 12637, Graphic technology—Vocabulary and ISO 5776 Graphic Technology—Symbols for text correction.

At this meeting the final resolution of comments was completed on the DIS ballots of ISO 12637 Part 2: Prepress terms, and Part 3: Printing terms and these will now go forward for FDIS ballot.

Planning work was started on a revision of Part 1: Fundamental terms.

Work on the update of ISO 5776 is moving forward slowly because WG1 is attempting to include correction marks for both alphabetic and logographic systems. A proof-correction committee with 13 members has been set up in Beijing with the aim of establishing Sino-Japanese standard correction marks for use in both language areas. It is understood that agreement may not be reached between China and Japan on all correction marks but that all marks will be shown in separate columns. Attempts to make contact with experts in Korea had not been successful, but it is hoped that they will join in talks on harmonization.

WG 2 Prepress data exchange

WG2 has a variety of activities that are underway or recently completed.

The two latest versions of PDF/X have been published. There are ISO 15930-7, Graphic technology—Prepress digital data exchange using PDF—Part 7: Complete exchange of printing data (PDF/X-4) and partial exchange of printing data with external profile reference (PDF/X-4p) using PDF 1.6 and ISO 15930-8, Graphic technology—Prepress digital data exchange using PDF—Part 8: Partial exchange of printing data using PDF 1.6 (PDF/X-5). (See IS&T Reporter Vol. 23 No. 1, January/February 2008 for more detail)

Work is well underway on ISO 16612-2 Graphic technology—Variable data exchange—Part 2: Using PDF/X-4 and PDF/X-5 (PDF/VT-1 and PDF/VT-2). (This is a modified title for this standard and VT stands for "variable" and "transactional" data). The work on PDF/VT is being done by Task Force 3 (TF3) within WG2. One of their major struggles is to identify the structural elements within the basic PDF specification that will support the needs of the variable

data printing marketplace. This is truly an emerging market and TF3 is developing the open interfaces and data structures that will be needed as this segment of the printing market develops.

As mentioned in the January-February issue of the Reporter, Adobe has placed the PDF file format in the standards domain and PDF 1.7 has been approved as ISO 32000-1. TC 171/SC 2/WG 7 is responsible for the support and maintenance of ISO 32000 and is actively reviewing proposals for inclusion in the next draft. TC130/WG2/TF3 is preparing a number of proposals for consideration by TC 171/SC 2/ WG 7 for the next version of ISO 32000. If these are accepted it will simplify the preparation of PDF/VT and more easily allow it to be a valid subset of PDF.

WG2 is also preparing ISO 12640-4, Graphic technology—Prepress digital data exchange—Part 4: Wide gamut display-referred standard colour image data (TBDencoded/SCID). It is expected that the encoding will be Adobe RGB (1998).

This standard consists of reference test images where the image data is the normative part of the standard. The images of Part 4 will supplement the images of Part 1 (CMYK data), Part 2 (sRGB gamut images), and Part 3 (large gamut images encoded as CIELAB data).

Part 4 will have 14 natural images and two synthetic images (test charts) as part of this standard. Additional work is being done in JWG9 to develop a set of scene referred images as Part 5 of ISO 12640 (see report of JWG9 later in this article).

WI 17972, Graphic technology—Prepress data exchange—Colour data exchange format (cdxf) was dropped for lack of progress in 2006. This work was to be based on the CxF file format being developed by GretagMacbeth (now X-Rite). However, representatives of X-Rite noted there are now several proposals, from different standards organizations, to develop an XML-based color data exchange format. WG2 is working with X-Rite to investigate the feasibility of developing an XML standard/schema

based on X-Rite CxF2 and is inviting other interested groups to participate.

WG 3 Process control and related metrology

Much of the work of WG3 is related to the definition of printing and proofing processes. In this meeting there was considerable discussion of the revision of ISO 12647-7, Graphic technology—Process control for the manufacture of half-tone colour separation, proofs and production prints—Part 7: Proofing processes working directly from digital data. The first edition of this standard was finalized just last year with the understanding that a new revision would be immediately started to add a second category of proofing to supplement the contract proofing requirements of the first edition. This second category is being variously identified as design proofing, layout proofing, content proofing, etc. Final agreement on the best designation for this category has not been identified.

Closely related to this, is the work being done to develop an ISO Technical Specifications ISO 10128 Graphic technology—Methods for calibration of a

printing system with digital data. During the discussions it was proposed that it be renamed "Methods of adjustment of the colour reproduction of a printing system to match a set of characterisation data". Although long, this is descriptive of the intent and content of this Technical Specification. The data adjustment methods included are use of tone value increase (TVI) curves, near neutral tone reproduction curves, and color management transforms.

It was reported that ISO 12646, Graphic technology—Displays for colour proofing—Characteristics and viewing conditions has been completed and is at ISO for publication.

As the printing industry moves from analogue to digital technology in the creating of printing plates (and even to digital printing) many of the process aims are changing. ISO 12647-2, Graphic technology—Process control for the production of half-tone colour separations, proof and production prints—Part 2: Offset lithographic processes, in particular is the subject of considerable discussion.

The tone reproduction inherent in offset lithography (which represents a large segment of the printing industry)

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has traditionally been tied to the plate-making process (positive working plates in Europe and negative working plates in North America). However, with the advent of digital plate-making (often called computer-to-plate or CTP) there are changes in the native tone reproduction and new references are required.

WG 4 Media and materials

Most of the activates of WG 4 are focused on the revision and updating of existing standards.

The revisions of both ISO 2834, Graphic technology—Test print preparation for printing inks—Part 3: Screen inks, and ISO 12635 Graphic technology—Plates for offset—Dimensions, have completed DIS ballot, the comments were revived, and the documents are in preparation for publication.

A New Work Item (NWI) Proposal for a standard on the measurement of Chemical Ghosting is being reviewed to determine practical methods of evaluation and the feasibility of a standard.

JWG 8 Revision of ISO 13655

The WG reviewed the comments on the DIS ballot of ISO 13655, Graphic technology—Spectral measurement and colorimetric computation for graphic arts images, and identified the steps necessary to resolve the comments. Because of the increased use of optical brightening agents in printing papers, a key issue is the identification of the spectral power distribution (SPD) of the illumination of the specimen during measurement.

Currently the proposed draft includes three measurement conditions. M1 requires the spectral power distribution of the specimen illumination to exactly match illuminant D50. Measurement condition M2 only requires that the spectral power distribution of the specimen illumination be provided in the wavelength range from 420 nm to at least 700 nm. and have no substantial radiation power in the wavelength range below 400 nm. Measurement condition M3 has the same sample illumination requirements as M2 and includes a linear polarizer in the influx and efflux portions of the optical path with their principal axes of polarization in the orthogonal or "crossed" orientation.

The comments creating the most discussion, and work to resolve, relate to the degree to which the M1 condition matches the D50 SPD and possible other SPD criteria in the region below 400 nm.

JWG 9

Development of ISO 12640-5 is in the early stages. The key areas of discussion were the identification of use cases and the color encoding of the images selected for use. Some of the use cases identified include:

- conversion from scene data to output-referred data including 4-color print data (useful to TC 130)
- spectral data (primarily research-oriented applications)
- how to make appearance conversion to different illuminant conditions (useful to TC 42 and to TC 130 prepress input)

Although, there are many potential candidates for describing color image encoding of scene-referred data, no existing color space encoding is satisfactory. There is a need for wide gamut primaries, high dynamic headroom, and an encoding scheme that will allow optimum use of the data range.

TC42/JWG 21

The NWI and CD ballots of all 4 parts of the ISO 5, Photography and graphic technology—ISO standard density measurements, were approve with comments and the technical comments were reviewed and resolved.

A detailed discussion of this standard and the revisions from previous versions will be the subject of a future Standards Update article.

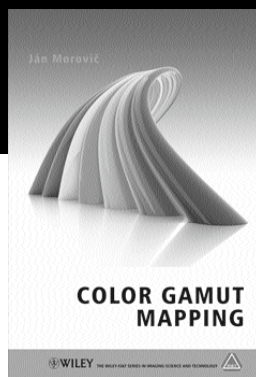*For suggestions for (or input to) future updates, or standards questions in general, please contact the author at mcdowell@npes.org or mcdowell@kodak.com.*