STANDARDS UPDATE

## Standards Update

*David Q. McDowell, Editor*

Several of the TC42 Working Groups and TC130 Working Groups met in Japan in March and in San Diego in April. This is a brief update of some of the results of those meetings.

**TC42/JWG 20, Color Characterization of Digital Still Cameras.** JWG22 is a joint working group of TC130 and TC42. ISO 17321-1, *Graphic technology and photography—Colour characterization of digital still cameras (DSCs)—Part 1: Stimuli, metrology, and test procedures*, has been approved and is in publication at ISO.

**TC42/JWG 21, Revision of ISO 5 Densitometry series.** JWG21 is a joint working group of TC130 and TC42 charged with the revision of the four parts of ISO 5, *Photography and Graphic Technology—ISO standard density measurements*. This work was started a number of years ago and languished for a variety of reasons. New drafts of all parts have been prepared and discussed in the recent meeting. These represent a complete rewrite of the previous documents to bring them into agreement with each other.

In addition, parameters that specify the conditions associated with the definition of density have been separated from the tolerances related to the measurement of density. The third major change is the introduction of spectral weighting factors for the computation of density from spectral data to supplement the spectral products data used to define filter instruments.

One other issue addressed in the recent meeting was the recognition that often the same spectrally based instrument is used to provide both density and colorimetric data. This led to the realization that the specification of the illuminant needed to be modified to allow commonality between applications.

The new proposal is that illuminant A be kept for consistency but provision be made for the addition of a UV-cut Filter with the same definition as in ISO 13655 as an optional measurement condition for density. In addition, wording is being prepared to allow instruments with narrow-band illumination (e.g., colored LEDs) for identified application areas.

It is the intent of the JWG that all four parts be kept together throughout the balloting process. It is anticipated that CD ballots will be initiated by late spring 2006.

**TC42/JWG 22, Color Measurement & Management.** JWG22 is a joint TC130 and TC42 working group that represents the interests of ISO in a joint ISO/IEC working group administered by IEC TC100, Audio, video and multimedia systems and equipment. A key standard under this group is the sRGB specification (ISO/IEC 61966-2-1). As a result of comments from several national bodies this document is undergoing review. An ad hoc group has been created, and it met for the first time on May 8, 2006 in Helsinki, Finland. Major changes are not anticipated. One goal is to ensure that the definition of sRGB includes the parameters identified in ISO 22028-1 (*Photography and graphic technology—Extended colour encodings for digital image storage, manipulation and interchange—Part 1: Architecture and requirements*).

**TC42/JWG23, Colour Data Exchange.** JWG23 is responsible for the ISO 22028, *Photography and graphic technology—Extended colour encodings for digital image storage, manipulation and interchange*, family of standards. Part 1 of that standard, *Architecture and requirements*, recommends the features that must be defined for effective use of a colour space in this area. Part 2, Reference output medium metric RGB colour image encoding (ROMM RGB), and Part 3, Reference input medium metric RGB colour image encoding (RIMM RGB), define such color space encodings. Both documents have been recently approved and are at the ISO central office for publication.

**TC42/JWG 24, Viewing Conditions.** This is another joint TC42 and TC 130 activity. It is charged with the revision of ISO 3664, *Viewing conditions—Graphic technology and photography*. The revision of ISO 3664 is being done in concert with the revision of ISO 13655, *Graphic technology—Spectral measurement and colorimetric computation* for graphic arts images. (See TC130 JWG8, which follows). One of the key changes from the existing standard is the tightening of the UV metamerism index from a shall be <4 to shall be < 1.5 and a should be < 1. Another is the introduction of both black and white backing of materials being viewed, along with criteria for their use. In addition, clause 4.5, *Conditions for appraisal of images displayed on colour monitors*, has been modified to recognize the availability of flat panel displays and the significant changes that they offer compared to CRT technology, upon which the current version is based.

**TC130/JWG 8, Colorimetric Measurement.** The revision of ISO 13655, *Graphic technology—Spectral measurement and colorimetric computation for graphic arts images*, is the responsibility of this joint working group between TC130 and TC42. A decision was made early in the revision process that it was important that ISO 3664, ISO 13655 and ISO 5 be kept consistent with each other and also recognize and be consistent with the practical application of these standards in the graphic arts industry. The changes necessary to accomplish this are probably more obvious in ISO 13655 than in the other standards.

Three measurement conditions have been specified for reflectance measurements. These are referred to as M1, M2, and M3. M1, which requires a close match to D50 including the UV portion, is very close to the previous reflectance measurement condition and also matches the standard viewing condition. M2 introduces a UV cut filter to minimize variations in readings between instruments. M3 introduces polarization and is for use in special cases where the influence of first-surface reflection on the colour coordinates is a problem.

**TC130/WG2/TF2 PDF/X.** WG2/TF2 is responsible for the PDF/X family of content data exchange standards. The two newest versions of this family 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).*

Both documents have just successfully completed CD ballot.

As part of the ballot review process the use of externally referenced profiles was moved from Part 8 (PDF/5) to Part 7 to become PDF/X-4p.

PDF/4 and PDF/5 are based on Version 1.6 of the Adobe PDF specification and include transparency and the use of optional content (often known as layers) principally to enable regional versioning.

As soon as the necessary edits are completed these documents will proceed to a 5-month DIS ballot.

**TC130/WG2 Prepress Data Exchange.** WG2 has a number of documents in various stages of preparation. Brief reports on each follow.

**ISO 12639AMD1.** ISO 12639 (TIFF/IT) was published in 2004. Almost immediately, an Amendment was initiated to add the use of the recently approved JBIG2-Amd2 compression to the TIFF/IT standard. The final ballot was approved and the document is in preparation for publication.

**ISO 12642-2.** *Graphic technology—Input data for characterization of 4-colour printing—Part 2: Expanded data set*, has been approved and is in preparation for publication. This is the 1617 patch data set that matches the recently published ANSI IT8.7/4:2005 standard. Both the ANSI and ISO versions include publicly available renderable data files of default targets in both a "visual" layout and a random layout.

The only differences between the ANSI and ISO versions are that in the ANSI version there are tracking marks along both sides of the long dimension of the target to facilitate the use of strip type readers.

**ISO 12640-3.** *Graphic technology—Prepress digital data exchange—Part 3: CIELAB standard colour image data (CIELAB/SCID)* has been approved and is being prepared for publication.

The only comments of a technical nature were concerning the relationship of the reference metric gamut (upon which the images are based), the gamuts of the individual images, and the optimal color gamut. (The optimal color gamut is defined as a theoretical gamut one would obtain using a perfect substrate, without fluorescence, and all combinations of any possible block dies.) These comments were resolved.

The quality of the shadow detail of some of the images was also noted and it was agreed that they were satisfactory for this version. However, it was agreed that the next revision should include additional images and that image quality, in addition to image content and image gamut, should be a key evaluation criteria.

**TC130/WG3 Process control.** Like WG2, WG3 has a number of documents in various stages of preparation. Brief reports on each follow.

**ISO 12647-2 AMD1.** ISO 12647-2, *Graphic technology—Process control for the production of half-tone colour separation, proofs and production prints—Part 2: Offset lithographic processes*, was published in 2004. Amendment 1 to that standard is currently in ballot to change the Lab values of the secondary colors to better match worldwide aims.

**ISO 12647-6.** *Graphic technology—Process control fort the production of half-tone colour separations, proofs and production prints – Part 6: Flexographic printing*. All comments generated during the DIS ballot of this standard have been resolved and the final document is at ISO for publication.

**ISO 12647-7.** *Graphic technology—Process control for the manufacture of half-tone colour separation, proofs and production prints —Part 7: Off-press proofing processes working directly from digital data* is the newest standard in the ISO 12647 series. It is unique in that it defines requirements and criteria by which the performance of digital proofing systems can be evaluated. The comments from the recent CD ballot were reviewed and resolved, and the document is now ready to proceed to a five-month DIS ballot.

**ISO 12646.** Although the initial version of *Graphic technology—Displays for colour proofing—Characteristics and viewing conditions* was published in 2004, the rapid evolution of flat-panel displays has caused TC130 to initiate a revision of this standard. The new revision provides separate requirements for CRT and flat-panel displays and recognizes the potential for increased brightness available with these displays. The results of the CD ballot of this revision were reviewed, resolved, and the document will be prepared for DIS ballot. It is expected that the DIS ballot will be approved quickly and a new standard will be available late this year.

**Gray-balance vs TVI discussions.** The US delegation introduced a proposed ISO Technical Report titled *Graphic technology—Prepress data exchange—Press digital calibration procedure.* This document proposes that the universal availability of digital data allows data transform curves to be derived that will, when used as part of the plate-making process, minimize the variations between individual presses.

The proposed corrections (calibrations) are based on use of specific neutral density aims for both the 3-color neutral curve and the black curve. The specific aims for these curves are based on a predefined shape in the highlight region and the relative CIELAB L* value of the 3-color solid overprint and the black solid.

While the proposal did not receive the full support of WG3 to allow it to move forward as a WG3 proposed new work item (NWI) several other countries encouraged the US to proceed with a National Body proposal in this area. In the course of discussion it was also agreed that this would be better suited as an ISO Technical Specification than as an ISO Technical Report.

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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