ISO News 21

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Fogra

International standardization for the printing industry

ISO TC 130

ISO TC 130 represents the international standardization body for the printing industry. International experts, active in terminology, prepress, printing, post press, climate neutrality, materials and certification, met in Berlin (Germany) in May 2016.

A summary from Dr Andreas Kraushaar and Dr Uwe Bertholdt.

The following project descriptions cover the current status of the pertinent ISO standards. Please also consult earlier issues of ISO News, in particular ISO News 13, for an explanation of the abbreviations such as WD, CD, DIS, etc.

Prepress (WG 2)

PDF for variable data printing

Task force 3 "TF3 - Variable data printing" discussed a proposal for PDF/VCR-1 (PDF for Variable Content Replacement). Live variable data printing refers to industrial printing use cases, e.g. label printing, where a variable data record is available only immediately before it is printed. It

Committee work and Standardization

Standardization efforts of Fogra

DIN NA 017 (NDR)	ISO TC 130 Graphic Technology
NA 017-00-02 AA Prepress and data exchange Convenor: Dr Andreas Kraushaar (Fogra)	WG 2 Digital prepress data exchange Fogra participation: Dr Andreas Kraushaar
NA 017-00-03 AA Process control and related metroloty Convenor: Dr Andreas Kraushaar (Fogra)	WG 3 Process control and related metroloty Convenor: Dr Andreas Kraushaar (Fogra)
NA 017-00-04 AA Media and materials Convenor: Dr Uwe Bertholdt (Fogra)	WG 4 Media and materials Convenor: Dr Uwe Bertholdt (Fogra)
	WG 12 Print finishing Fogra participation: Florian Hirschhalmer

Other Standardization Committees

DIN NA 043-01-17-01 Test processes for identity cards Fogra participation: Arne Müller	DIN NA 043-01-17-03 Machine readable travel documents Fogra participation: Arne Müller	DIN NA 115-01-03-02 AK Features for tamper evidence medicine packaging Fogra participation: Arne Müller

Overview of those committees, in which Fogra personell is currently active.

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NEXT MEETING

12 to 17 September 2016 in San José (USA)

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is required e.g. for security printing or for cases requiring spontaneous changes of print order. PDF/VCR-1 defines a template file format including placeholders and a variable data format that allow live replacement by a merge/render engine. Christoph Oeters from SOFHA and Paul Jones from Teclyn proposed a document (ISO 16613-1 – Graphic Technology – Variable content replacement - Use of PDF/X for variable content replacement (PDF/VCR-1)). This document was approved as CD and is going to DIS stage now.

"PDF/X-6" is coming closer

The current title of the document is: "Complete exchange of printing data (PDF/X-6) and partial exchange of printing data with external profile reference (PDF/X-6p and PDF/X-6n) using PDF 2.0". The plan is that the new PDF/X-6 standard updates existing PDF/X-4 and PDF/X-5 standard parts, keeping only those parts that are widely used, that will be PDF/X-6 itself, PDF/X-6p (for externally referenced ICC profiles in the output intent) and PDF/X-6n (for n-channel colour spaces e.g. CMYK + Orange, Green, Violet. The latter does currently getting more important due to the many ink jet presses that are using this or other n-channel colour spaces. PDF 2.0, the new version of the ISO PDF standard, will allow for embedding an n-channel ICC profile into an output intent which will be the basis for PDF/X-6n.

Into the same direction goes the ability to have different output intents on different pages in the same PDF file. That allows for print files that consist of parts that are produced on different machines, e.g. cover and content for a book.

In addition to that, PDF/X-6 will allow for annotations or form fields in the printed page area, as long as they have a defined appearance to which the same requirements as for all other page content will apply. The somewhat artificial and superfluous prohibition of such page content will go away.

PDF/X-6 will most probably be published shortly after PDF 2.0 (ISO 32000-2) in 2017. It is planned to also create Application Notes for PDF/X-6, especially to support vendors who develop applications for PDF/X-6.

Future colour data exchange using XML (ISO 17972)

ISO 17972 represents a new standard that extends the storage of characterization data by providing a flexible schema to facilitate colour and process data exchange with the additional resources based on X-Rite's CxF3 Standard (Colour Exchange Format – www.colorexchangeformat.com). Part 1 has been published in 2015. Part 2, covering scanner input target data, has been published and will be referenced in the new standard ISO 12641-2. Part 3 covers output target data and is intended to replace all the existing formats (e.g. 12642 or 28178) to save characterization data sets. Due to some technical comments a second DIS will be started right after Berlin. The standard "Spot colour characterisation data (CxF/X-4)" that defines an exchange format for spectral measurement data of inks to provide a means to characterise spot colour inks was published and will be used more and more in PDF/X environments.

Historical IT.8-7/1 target confirmed – Advanced IT.8 targets to come soon

More than 1,000,000 targets, both light-transmissive and reflective, have been produced and used in the past decades for calibrating scanners. However, that last revision dates back to 1997 and for instance requires the storage on a floppy disk in MS-DOS format. The standard was revised and has been published.

Based on the input from LaserSoft Imaging (Germany) the second part was continued. It is termed: "Advanced Colour targets for input scanner calibration" and is based on the higher demands from scientific institutions, like museums, art and cultural heritage archives, special public administration applications for ID-documents that require more patches to achieve a better scanner colour characterization. It basically defines general parameters for all advanced targets to use. Based on this, three exemplary transmissive and reflective targets will be defined following the main schema. The new work item ballot should be started after the Berlin meeting.

Metadata proposal for proofing workflow (ISO 19445)

A draft document that was prepared by the Ghent PDF Workgroup was proposed to become an ISO document with the title "Graphic technology – Metadata for graphic arts workflow – Part 1: XMP metadata for image and document proofing". A DIS ballot was positive and the document has been published. The metadata used for describing a soft-proofing situation as developed by Fogra might be added to a future revision. Right now the lack of industry interest does not justify any changes.

Tone response curve adjustment (carrying curves in a standardized way) (ISO 18620)

The standard is termed "Tone adjustment curves exchange". It should be useful to unambiguously communicate tone adjustment curves defined as nominal percentage between workflow systems with and beyond a printing plant. It was hoped to throw away the plethora of proprietary standards for plate curves and move to a unified way of carrying plate curves. The standard was published and is ready to be implemented and used. So check it out.

Print Requirements and Print Quality eXchange (ISO 20616-1 and -2)

Brand owners and print buyers commissioning physical printing require two things: 1) print requirements describing the intended printing (PRX: ISO 20616-1) and 2) the results of the printing itself (PQX: ISO 20616-2). These new standards, with development hosted by IDEAlliance,

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are intended to facilitate the one-way transmission of performance data from print service providers to relevant stakeholders and brand owners for one or more printed samples from a single press run. PQX is structured as an XML message, which communicates colour, registration, and observed defects. PQX takes advantage of the standard CxF format (ISO 17972-2) in order to communicate color. The communication from the brand owner toward the print shop by means of print requirements exchange, which is termed PRX, and will be covered in part 1 of this multi-part standard. The following two standards have been started. ISO 20616-1, Graphic technology — File format for quality control software and metadata — Part 1: Print requirements exchange (PRX) and Part 2: Print quality exchange (PQX). A working draft is being developed for both standards.

ICC V5 becomes iccMAX (ISO 20677-1)

iccMAX is a new colour management system developed in ICC Labs, primarily by members of the Architecture Working Group under the lead of Max Derhak from Onyx Graphics. The new specification will extend the current V4-Spec by providing many new features. The standard will be titled: "Image technology colour management -- Expansion of architecture, profile format, and data structure to enable development of advanced colour management systems". Please find more information online here: http://www.color.org/iccmax/. First iccMAX profiles have been released such as a 6-channel digital camera spectral input profile. In Berlin the clock was started, i.e. a new work item ballot (for a 4 year period) was initiated. The current document will be balloted as a working draft (WD).

Process control and related metrology (WG 3, JWG8, JWG14):

Colour measurement standard (ISO 13655)

The standard has been published in 2009. For surface colours it comprises 4 different measurement modes namely "M0", "M1", "M2" and "M3". The on-going revision has almost been finished. The main change was the modification of the white backing. The DIS ballot comments have been resolved and a second DIS will be initiated soon. The adaption of M0, M1 and M2 to transmissive measurement was not accepted since the lack of appropriate CIE metrology backup for the used d/0 geometry using a diffusor.

Certification of Contract Proofing systems and proofing sites (ISO 12647-7)

The revision has been finished and after resolving final comments in Berlin the document will be sent to ISO CS for final publication. The main change were the update of the proofing paper permanence definition, the checking of spot colours and the transition from CIEDE1976 (ΔE*ab) values to CIEDE2000 tolerance values accompanied by a tightening of the tolerances. It was also decided to include the requirements for the so-called third level, i.e. contract proofs on a job by job level (termed "field proof"). In other words: a proof print of a typical job with a Fogra MediaWedge and the correct status line and without a large ECI2002 test chart.

The digital production printing standard (ISO 15311)

Part 1 of that multipart standard defines metrics to measure important print image quality attributes. This technical specification was published and in Berlin the development version was discussed. Here further image quality aspects will be added such as media relative colour accuracy with black point compensation, metamerism, water resistance, scratch resistance or multiple aspects of mis-registration.

Part 2 (commercial printing applications) was discussed in light of the main scope resolving the discomfort of some experts. It should provide guidance to qualify printed products by means of a press acceptance test. In particular, this technical specification will define what image quality shall be measured and which metrics should be used. Concrete aim values and tolerances are not subject for the main part but may be provided by Fogra or IDEAlliance by means of an informative annex (following the requirements of the main body).

The specification for part 3 (large format signage printing) originates from work of Fogra Digital Printing Working Group (DPWG). The status is unchanged. So interested persons can access the free of charge Fogra specification and report their feedback in the DPWG (Digital Printing Working Group).

Measurement of image quality attributes (ISO/TS 18621 family)

The joint working group (JWG 14) between TC130, JTC1 SC28 WG4 and WG42 discussed the further development of four on-going projects. These are the computation of gamut volumes (-11), the evaluation of graininess (-12), of macroscopic uniformity – M-Score (-22) and perceptual resolution – L-Score (-31). A new work item ballot has been started for the L-Score method – so the ISO clock is ticking. The definition of permanence requirements will be discussed in a separate working group JWG27. Based on the feedback the metrics will be fine-tuned and published not before 2017.

Defining meaningful dot gain curves for spot colours (ISO 20654)

Based on the work by the so-called "SCHMO" group, the document was positively balloted to initiate a DIS ballot. It covers a perceptual uniform way to calculate tone values for spot colours (between substrate and colour) where the Murray Davies formula is known not to work correctly. The title is "Management and calculation of spot colour tone value (SCTV)". Intermediate results show that SCTV might be the first method to allow for an unambiguous plate calibration and hence spot colour process control.

New project – Multicolor printing

A group of experts updated the group on the feedback. Most of the contacted ink manufacturer responded to contribute to this project. Input is welcomed and more information will be presented at the next San José meeting.

Offset standard will be amended (ISO 12647-2)

The Fred15 project revealed that the paper white points for the sheet feed conditions PC1 and PC5 did not fully represent the

marked place. Since also small changes might result in practical discrepancies, a resolution was started. Expecting a positive outcome the proposal from the German delegation will be balloted for CD. This allows FOGRA51 and FOGRA52 (PSO values) to reflect the ISO requirements. Assuming a positive vote, the ISO 12647-2 standard (together with the improvement) might be available in late 2017.

Media and materials (WG 4)

Ink set for four colour printing in lithography (ISO CD 2846-1 rev.)

The APCO II/II test paper was used for many years to test the colour coordinates, transparency and film thickness ranges of process inks. It is no longer manufactured. There is only some remaining stock. IGT (Amsterdam) has developed and ordered the production of a successor paper which is now in stock. All colour aims for process inks developed for APCO II/II are still valid for the new substrate. This is the basis for the revision of this Standard. The voting as committee draft (CD) was positive, comments were considered and now the DIS-vote will be prepared.

Tack measurement (ISO DIS 12634 rev.)

A new draft combining elements of the existing standard with elements of a new US testing method has not met the expectations of all nations. The USA criticised differences to ASTM D 4361, Japan favours a unified testing speed and Germany likes to keep test conditions more flexible. All three nations rejected the Draft Standard, which however formally passed. The German positions were not accepted in the discussion with the project leader. A second DIS-vote will be prepared and the outcome will show if the US and Japanese positions are considered satisfactorily.

Blankets (ISO CD 12636 rev.)

The Committee Draft vote on the revision of this Standard was positive. Basing on the discussions in Berlin prior to the DIS-vote, a paragraph on customer information concerning blanket properties will be added to the document.

WG 4 will not meet in San José since the vote planned will not be finished in September.

Environmental aspects of graphic technology (WG 11)

Guideline for the measurement of energy efficiency of digital printing presses (ISO 20690)

Based on the findings of the Fogra research project 35.006, the standard is now at CD stage. In Seoul it was discussed to include also the typical energy consumption (TEC) into ISO 20690, but during long discussions (all video recordings available on the Fogra webpage) it was agreed by a committee internal ballot to separate TEC out and start an all new project that covers TEC. This work started in Berlin. Based on feedback from the Japan Business Machine and Information System Industries (JBMIA) and great support from the co-editor Tim Deeming (Ricoh) a revised document was discussed in Berlin. This document will be balloted for a second CD ballot.

Evaluation of deinkability potential of printed products

During the meeting additions to the terms and definitions were considered and the scope discussed. TC6 members participating in the meeting continue to challenge the scope, failing however to suggest alternative wordings. The opposition of a particular cohort within TC6 to ISO 21331 has been escalated to TC level. It has been agreed to ballot both committees with a resolution to form a JWG under the convenorship of Laurel Brunner who remains the project leader for ISO 21331. The JWG is under the leadership of TC6 and the TC6 secretariat has undertaken to guarantee that this project will be progressed to completion.

Postpress (WG 12)

Graphic Technology – Postpress – General Requirements (ISO DIS 16762)

This future Standard shall ensure information exchange of postpress requirements (e.g. folding and cutting schema) to all responsible for print job planning and preliminary production steps. Additional requirements will be on incoming goods, general requirements on post press operations and on the definition on responsibilities between individual process steps. Meanwhile the document was accepted as a Draft International Standard. Numerous comments – especially from Fogra – were discussed and accepted. Now the document will be prepared for publication.

Pull test method (ISO CD 19594)

Fogra developed a draft for the Standardization of the pull test basing on the results of its research project 70.004. It deals with upwards pulling devices only. The draft has been accepted as a Draft International Standard and was intensively commented. Fogra experts answered all comments and will prepare the draft for the final voting.