



IS&T

REPORTER

"THE WINDOW ON IMAGING"

Vol. 29, No. 3 July - September 2014

Archiving 2014

OBSOLETE MEDIA AWARD FOR BEST INTERACTIVE PAPER

"Toy Kit" of the Emperor: Exhibiting National Palace Museum's Artefacts of Emperor Chien-Lung on Tablets

Pei-Jeng Kuo, Wei-Hsiang Su, Hsing Huang, Yi-Ning Huang, and Yao-Nan Lian; National Chengchi University (Taiwan)

Abstract: Representing "interest in playfulness," the value of a curio box is appreciated by cleverness of its design, including hidden layers and triggers setting them off. This idea serves as the inspiration of our new application: exhibiting popular National Palace Museum artifacts on social sites in the form of a "toy kit," on tablets. More precisely, we see our highly interactive design as "curio boxes" for modern emperors—the users. Our goal is to bring about enjoyable, engaging and intimate experience over the artifacts.

This application, though under extensive construction, received positive reviews from a focus group composed of the students of National Chengchi University. We find by fostering the archive as a virtual, yet touchable toy kit can obviously bring the user closer to our content. In this project, with the support from National Science Council of Taiwan, we will help the NPM develop brand new mobile experience of its collections.

Annotation and Linkage of Motion-Picture in an Interactive and Collaborative Environments

André Kilchenmann and Lukas Rosenthaler, University Basel (Switzerland)

Abstract: A research of motion picture media usually presents difficulties because the dynamic medium is not so easy to grasp. Existing software solutions facilitate the work, but are often limited to the medium of film. At our institute we are developing a virtual research environment called SALSAH (System for annotation and linkage of sources in arts and humanities). The question was, when we have the digitized data, what will we do with them? We will not just archive, we will use them. SALSAH is a totally web based platform for researcher in a private and for public users in a restricted environment. The tools are search, annotate, mark

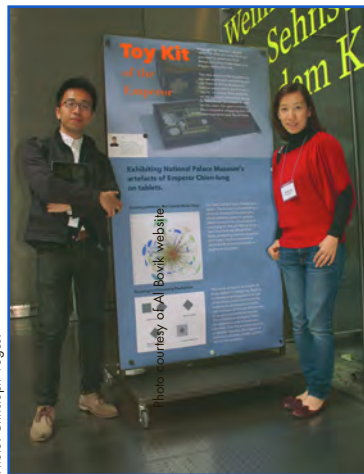


Photo: Christoph Voges.

Wei-Hsiang Su and Yao-Nan Lian in front of their award winning paper.

regions on images and link all objects with other objects. And now we are creating a new module for working with motion picture and audio files.

Automated Quality Assurance for Migration of Born-Digital Images

Artur Kulmukhametov,¹ Markus Plagg,¹ and Christoph Becker^{1,2}; ¹Vienna University of Technology (Austria) and ²University of Toronto (Canada)

Abstract: Migration to standardized formats is a common approach for the preservation of digital objects. To ensure the authenticity of the resulting artefacts and the validity of the migration, quality assurance

is essential. For large-scale migration, automated quality assurance processes are an essential prerequisite. This paper focuses on the migration processes of born-digital photographs. We describe the particular requirements for successful automation of quality assurance. A key aspect of this is the authenticity of the image, the fidelity of the rendering as it appears to an expert viewer. Automation requires us to substitute the human expert viewer with a software algorithm. The key question is whether existing image comparison mechanisms can be applied. To address it, we introduce a publicly available automated workflow relying on perceptual quality assurance measures and present an experiment testing the correlation of the automated measures to human perception.

[papers continue on page 3](#)

To view the full papers of these abstracts for no fee go to www.imaging.org/ist/publications/reporter/index.cfm

* Papers were presented at Archiving 2014, held May 13-16, 2014, in Berlin Germany.

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ARCHIVING 2014 ATTRACTS ATTENDEES FROM ACROSS THE GLOBE TO BERLIN

By General Chair Christoph Voges, consultant, digital archiving and digitization

This year's Archiving conference took place in Berlin and was located directly in the Center of Germany's capital at Potsdamer Platz. Since the first conference took place in San Antonio, Texas in 2004, this annual event has been attracting presenters and attendees from all over the world. Traditionally, the conference extends over four days. The first day provides a program of short courses taught by experts from industry, academia, and cultural heritage institutions who share their state-of-the-art knowledge with attendees. This is followed by three days of single-track technical sessions with presentations covering a wide range of topics related to digital archiving and digitization. For this year's conference, we engaged eleven cooperating societies and a program committee with experts from academia, cultural heritage institutions, and industry.

On the first day, attendees had the opportunity to select from ten different courses on topics ranging from camera and imaging performance, analyzing and processing of historical documents, and the PDF/A ISO standard to web archiving, open licenses in the cultural heritage context, and optical soundtracks. Further-



Photo courtesy of Christoph Voges.

Archiving 2014 Committee Members and Session Chairs: Andrea Goethals (Harvard University Library); Karl-Magnus Drake (Swedish National Archives); Erik Landsberg (Museum of Modern Art); Lukas Rosenthaler, (University of Basel); David Walls (US Government Printing Office); Peter Burns (Burns Digital Imaging); Jonas Palm (Swedish National Archives); Katherine Hougaard Edsen Johansen (Danish National Archives); Dietmar Wüller (Image Engineering); Christoph Voges (consultant); Kari Smith (MIT Institute Archives and Special Collections); Volker Märgner (Technical University Braunschweig); and Peter Fornaro (University of Basel).

more, an introductory workshop on digital preservation, as well as a course on semantic structures and ontologies in digital curation procedures were provided. Apart from the official short course program, a focus group meeting of the 4C project—which deals with the costs of digital curation—was held. The day ended with a casual get-together for attendees.

The technical program started on Wednesday with a keynote by recently-inducted SMPTE Fellow Siegfried Foessel (Fraunhofer IIS) on motion picture archiving. Foessel was elected to Fellow status for his role in establishing worldwide standards for the digitization of the motion picture industry. Foessel is also

executive vice president of the German Fernseh- und Kinotechnische Gesellschaft e.V. (FKTG), a cooperating society of the event. The

keynote was followed by a session on film archiving chaired by Dietmar Wüller (Image Engineering). Further sessions that day were E-Government Archiving (chaired by Lukas Rosenthaler, University of Basel), Preservation of Digital Assets (chaired by Katherine Hougaard Edsen Johansen, Danish National Archives), and Technical Processes and Workflows (chaired by Peter Fornaro, University of Basel). Besides the technical program, a one-day exhibition took place Wednesday, with nine exhibitors presenting current products and developments from the field of digital archiving. The day ended with the Conference Reception, held at a typical German "Biergarten".

On Thursday, sessions on Migration and Storage (chaired by Jonas Palm, Swedish National Archives), Preservation of Digital Assets (chaired by Karl-Magnus Drake, Swedish National Archives), as well as Cost Models and Aspects (chaired by David Walls, US Government Printing Office) were held. The first of the two Interactive Paper Sessions occurred before



Photos: Peter Burns.

The conference location allowed attendees to tour the Berlin Film and Television Museum during a break. Above: Video editing console found there. At right: Button camera at the Stasi Archives.



ARCHIVING 2014

Attendees*:	170
Oral Papers:	35
Interactive Papers:	19
Short Courses:	11
Exhibitors:	9
Dates:	May 13-16, 2014
Location:	Berlin, Germany
*includes Short Course only and guests	

attendees headed off to one of three Behind-the-Scenes tours to the National Film Archives (Bundesfilmarchiv), the Stasi Archives (BStU), or the State Library (Staatsbibliothek).

The final day of the conference began with a keynote by Carsten Stühring who is with the BStU, on “Digitization at the Archives of the BStU—Projects and Perspectives”. Oral sessions contained interesting talks on Digital Curation (chaired by Andrea Goethals, Harvard University Library), as well as Innovative Projects and Activities (chaired by Peter Burns, Burns Digital Imaging, and Erik Landsberg, Museum of Modern Art). The second of the two Interactive Paper Sessions was also held. After this session, attendee votes were tallied to determine the winner of the Obsolete Media Award



Photo: Peter Burns???



Photo: Christoph Voges.

(see page 1 for paper abstract and photo of winners).”

A novelty of this year was the panel discussion that wrapped-up the conference. The goal was an open forum to follow-up on the most important ideas put forth during the event. Moderated by

Above: Closing panel members, left to right, Program Chair and General Chair for 2015 David Walls (US Government Printing Office); Anne Mason (US National Park Services), moderator and General Chair Christoph Voges; Erik Landsberg (Museum of Modern Art); and Karl-Magnus Drake (Swedish National Archives). Left: Short course instructor Hans van Dormolen (National Library of the Netherlands) during his class Introduction and Explanation of the Metamorfoze Preservation Imaging Guidelines, Version 1.0, 2012.

General Chair Voges, the panel brought attendees together for a group discussion and fruitful conclusion to the event.

Looking back on a successful conference, we thank all contributors and attendees for supporting this exciting event! Next year the conference travels to Los Angeles, CA, where it will be hosted at the Getty Center, May 19-22, 2015. We hope you'll join us for this unique opportunity. Submit paper abstracts by December 8, 2014; visit www.imaging.org/archiving for details. ▲

[papers continued from page 1](#)

Image Indexing Using Prosemantic Features

Gianluigi Ciocca,¹ Claudio Cusano,² Simone Santini,³ and Raimondo Schettini¹; ¹Università degli Studi di Milano-Bicocca (Italy); ²Università degli Studi di Pavia (Italy); and ³Universidad Autónoma de Madrid (Spain)

Abstract: We present here, an image description approach based on prosemantic features. The images are firstly represented by a set of low-level features related to their structure and color distribution. Those descriptions are fed to a battery of image classifiers trained to evaluate the membership of the images with respect to a set of 14 overlapping classes. Prosemantic features are obtained by packing together the scores. In this paper we will show how prosemantic features outperform traditional low-level features in a variety of tasks. One is content-based retrieval: we included prosemantic features into the framework of the QuickLook2 image retrieval system. Target search experiments show that the use of prosemantic features, combined with the relevance feedback mechanism of QuickLook2, allows for a more

successful and quick retrieval of the query images with respect to low-level features. Moreover, we will show the effectiveness of our features for the browsing and visualization of the results obtained from image search engines.

The Digital-Age Challenges of Preserving "Personal" Content: Manuscript Drafts, Correspondence, & Social Movements

Howard Besser, New York University (USA)

Abstract: This paper outlines the crisis facing Archives in an age when the material they traditionally acquire is mostly available only in digital form. It discusses how the first stage (writing on computers instead of paper) was exacerbated by the 2nd stage (messages and files hosted on social networks and external services in the Cloud). Placing this in the context of previous studies advocating archivist intervention within the workflow of the creator, it discusses strategies for nudging creators to alter practices so that their works will be more preservable. The presentation will be couched within a case study of efforts to archive user-generated media related to the “Occupy” Movement. ▲



imaging.org

Society for Imaging Science and Technology

IS&T President's Annual Report — July 1, 2013 to June 30, 2014

July 1st marks the end of my first year in the office of President of IS&T. I see the theme of this year to be one of collaboration. Imaging Science & Technology is becoming an increasingly pervasive discipline in this modern age. It is our duty as members and officers to make sure that IS&T remains at the centre of this.

It is fitting to start with a short summary of the last two years where I acted as Executive Vice President under 2011-13 President Rob Buckley. Rob and I first met at Archiving 2004 when he was Joint General Chair for the meeting and I was presenting my first paper at an IS&T conference. Since then we met a number of times at various meetings and the collaboration continued during Rob's tenure as President where I started to look at future strategy for IS&T. Good preparation indeed for my term as President, so my thanks go to Rob for this.

Collaboration is a key part of what IS&T delivers. This is most evident at our conferences in the author lists of the papers published, but more so in the coffee, poster, and exhibition areas. These are some of the places where attendees get together to network, starting and maintaining these collaborations. It is for this reason that I devote much of this report to the IS&T conference offering.

- **Archiving:** Although I attended the early conferences my career has taken me in a different direction. This meeting acts as a bridge between IS&T and the museum / national archive community, bringing collaborations outside of our usual community.
- **Color:** A fascinating area for me as my original degree was in Color Chemistry. Even more than our other fields of endeavor, color is a pervasive [continues on page 6](#)

IS&T 2013 Financial Statement

STATEMENT OF INCOME

Fiscal Years Ending December 31, 2013 and December 31, 2012

	2013	2012
INCOME		
Conferences	\$801,433	\$890,425
Publications	406,944	395,121
Membership	90,335	93,695
Standards	137,796	135,642
Other	17,219	14,265
Total Income	\$1,453,726	\$1,529,147
EXPENSE		
Conference	\$943,573	\$1,019,567
Publications	482,530	374,731
Membership	96,966	92,410
Standards	131,252	125,169
Other	47,243	42,838
Total Expenses	\$1,701,565	\$1,654,715
Net Operations	(247,839)	(125,568)
Investment Income	66,764	40,575
Realized Gain (Loss)	64,689	106,709
NET INCOME (Loss)	\$(116,385)	\$21,715

Balance Sheet Notes

1. Income (Loss) from operations in 2013 was \$(247,839).
2. Per the request of the new auditors "Funds Held for Others" was newly defined. Some funds previously reported in "Due to Chapter" are now reported here.
3. IS&T's 2013 Annual Report is available to members upon request.

Statement of Income Notes

At the request of our new auditors Conferences & Publications were restated to report only 50% of EI and JE Income and Expenses. This restatement had \$0 impact on Net Income, as we had always only reported the net profit to IS&T.

General Administration and Labor allocations in 2013 were as follows: conferences 65%; publications 23%; membership 7%; standards 5%. These percentages were applied to administration and labor expenses to determine a net gain (loss) for conferences, publications, membership, and standards.

IS&T's investments are administered through Morgan Stanley in Washington, DC. The investments are currently invested in Money Market funds, Mutual Funds, CD's and in the TRAK stock portfolio. As of December 31, 2013, these investments had a market value of \$1,488,362 (in 2012 valued at \$1,616,728).

BALANCE SHEET

Fiscal Years Ending December 31, 2013 and December 31, 2012

	2013	2012
ASSETS		
<i>Current Assets</i>		
Checking and Petty Cash	\$ 155,071	\$ 69,210
Money Market / CD's	468,351	489,189
Investments	1,311,285	1,332,053
Accounts Receivable	27,149	13,993
Book Inventories	90,181	105,046
Prepaid and deferred expense	78,358	84,078
Total Current Assets	\$2,130,395	\$2,093,569
<i>Property and Equipment</i>		
Land	\$29,000	\$29,000
Building and Improvements	156,291	156,291
Furniture and Equipment	120,093	118,513
Subtotal	305,383	303,804
Less Accumulated Depreciation	(268,944)	(254,787)
Total Fixed Assets	36,440	49,017
TOTAL ASSETS	\$2,166,835	\$2,142,587
LIABILITIES AND FUND BALANCES		
<i>Liabilities</i>		
Accounts Payable	\$59,121	\$43,400
Accrued Expenses	56,300	56,421
Due to Chapters	18,113	17,183
Funds Held for Others	62,002	57,457
Deferred Income, Dues, Subs., Mtgs.	342,104	222,547
Total Liabilities	537,641	397,008
<i>Equity</i>		
Unrestricted	\$1,534,637	\$1,661,381
Davis Scholarship Fund	94,557	84,198
Total Liabilities	\$1,629,194	\$1,745,579
TOTAL LIABILITIES AND EQUITY	\$2,166,835	\$2,142,587

Publications Annual Report

July 1, 2013 to June 30, 2014

Journal of Imaging Science and Technology (JIST)

by George Chiu, editor

The Journal welcomed a new associate editor, Dr. Ken Lindblom (Hewlett-Packard, Boise) in August 2013. Dr. Lindblom has been a long time contributor for the Society and is handling manuscripts related to imaging systems and device, electrophotography, inkjet, and media. We will be adding associate editors in the areas of functional printing and digital fabrication in the near term.

The transition to an on-line manuscript submission and management system was completed in Spring 2014. The new JIST on-line submission site is: <http://jist.msubmit.com/>. Starting in April, all new JIST submission began to go through this portal. The new system allows for more transparency in terms of the status of a manuscript at various steps of the review process. As such, we anticipate a reduction in submission to publication. As with any new system, there will some growing pains as all adjust to the new workflow. We welcome suggestions and comments regarding the new on-line manuscript management system to jist@imaging.org.

From 1 July 2013 to 30 June 2014, the Journal received 79 submissions, published 34 articles, rejected 19 manuscripts, and forwarded 11 manuscripts to the *Journal of Electronic Imaging*, on the basis of their subject matters. Two Focused Sections were published during this time. Five articles based on presentations at NIP 28 were solicited and published with three regular articles in the May/June 2013 issue. Four articles based on selected presentations at Digital Fabrication 2012, guest edited by Drs. Jim Stasiak and Jolke Perelaer, were published in the July/ August 2013 issue.

There are some exciting Focused Sections planned for 2014, including selected papers from the 2013 Color and Imaging Conference (CIC) and the 2014 International Congress of Imaging Science (ICIS). Dr. Jim Stasiak is also guest editing a Focused Section based on the successful Digital Biology and Biofabrication Special Topic session at the 2013 Digital Fabrication Conference.

Journal of Electronic Imaging (JEI)

by Gaurav Sharma, editor

JEI received 566 submissions, including 502 contributed papers, 43 special section papers, and 21 letters in 2013, and published 191 papers, including 149 contributed papers, 39 special section papers, and 3 letters for a total of 2,220 pages. This represents a continuing trend of significant increase in submissions over past years (in 2010, 2011, and 2012, JEI had 197, 278, and 434 submissions, respectively). Starting with the Jan/Feb 2014 issue, JEI now publishes an issue once every two months instead of the previous once-a-quarter frequency. The increase in publication frequency will better accommodate the increase in submissions and published papers that JEI is seeing.

In 2014, JEI has published one special section: Stereoscopic Displays and Applications (Nick Holliman and Takashi Kawai, guest editors) and has one additional special section planned, Image/Video Quality and System Performance (Mohamed-Chaker Larabi, Sophie Triantaphillidou, and Andrew B. Watson, guest editors). In 2014, JEI has also featured one review/tutorial article: "Jaggies as aliasing or reconstruction phenomena: a tutorial" by Isaac Amidror and Roger D. Hersch. The tutorial/review articles are open access and I encourage you to visit the JEI website to see these and other exciting research featured in JEI.

The following new associate editors have joined the editorial board: Damon M. Chandler (Oklahoma State University, US), Gene Cheung (National Institute of Informatics, Japan), Nicolas S. Holliman (The University of York, UK), Salil Prabhakar (DeltaID Inc., US), Chandra Sekhar Seemantula (Indian Institute of Science, India). We have also had several retirements: Philip Dang (Intel), Michael Gormish (Ricoh), and Andrew Segall (Sharp Laboratories America) have retired from the JEI Editorial Board. We thank them for their dedicated service.

To help educate authors and reduce the number of ethics violations that arise from inadvertent errors and misunderstandings, JEI Editor Gaurav Sharma has been doing a series of author information presentations on "Publication Etiquette and Ethics: Things You Should Know Before Submitting Your First Paper," which have been featured thus far in three different conferences/workshops/webinars.

Information relating to the journal, including subscription options, tables of contents of current and past issues, prospective author guidelines, calls for papers, and the editorial schedule for upcoming special sections can be found via www.imaging.org/ist/publications/jei.cfm.

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discipline that provides an interface to so many different communities. In the past this meeting has provided an interface into the display community, but this year this will widen to bring collaboration with a medical community with a move to Boston in November.

- **Electronic Imaging:** This is a large event held in collaboration with the SPIE each year. The IS&T Board of Directors meets at this event and it has been my privilege to meet with many attendees from both an IS&T and a SPIE background. There are some impressive communities working together here, and from a personal perspective I am particularly interested in the 3D imaging and camera meetings.
- **NIP and Digital Fabrication.** Of all the IS&T conferences, this is the one I call home. Two conferences working together with a widening community. Of particular interest to me is the fact that this meeting provides a place between mature and emerging printing applications with the potential to build value to the whole community. This meeting is also providing collaboration with the Printed Electronics community and brings welcome links with industry organizations such as OE-A.
- **TDPF:** I retain a strong interest in this meeting as I worked in the photographic industry for many years. It is to my regret that I have never managed to attend this meeting as it brings strong linkage to IS&T's heritage of photo delivery.

All these meetings have their strengths, but they all face challenges, too. Defining these challenges and addressing them while retaining the strong communities they attract is key to the success of the Society. We are indebted to the work that Conference Vice President Sabine Süssstrunk for her work in this area. In summary, this wide spectrum of conference offerings brings collaborations into the Society from a wide range of other interest groups, positioning us at the centre of Imaging Science & Technology.

One central role is to give this wide imaging community a publications platform. Essential for academics and students, and valued by many in industry, the IS&T provides platforms from *The Reporter* to peer reviewed journals. In addition to recording research for posterity, the journals also provide testament to the breadth of work conducted and recorded in our community.

One often neglected area of collaboration effort is the work done on international standards. These are by nature international collaborative efforts, and IS&T plays an active role in facilitating this work. Our most formal effort is in ISO/TC 42, the standards body for Photography, but behind this dwells other collaborations too. Our conferences see papers from the ISO/TC 130 Graphics Arts community plus a growing body from IEC/TC 119 (Printed Electronics).

Finally, organizations and collaborations consist of people working together to a common aim. This year I made my first visit to the IS&T office and spent a day with the very dedicated staff. Chances are few and far between for me to do this as I live around 3,500 miles away. Many of you will have met some of the

IS&T BOARD OF DIRECTORS

July 1, 2013 - June 30, 2014

President: Alan Hodgson (3M UK PLC)

Immediate Past President: Robert Buckley (Univ. of Rochester/NewMarket Imaging)

Executive VP: Geoff Woolfe (Canon Information Systems Research Australia Pty. Ltd.)

Conference VP: Sabine Süssstrunk (Ecole Polytechnique Fédérale de Lausanne)

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Rochester: Michel Molaire (Molaire Consulting)

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July 1, 2014 - June 30, 2015

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Secretary: Steve Korol (Evolutionary Technology)

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Japan: Junichi Hanna (Tokyo Institute of Technology)

Korea: Choon-Woo Kim (Inha University)

Rochester: Michel Molaire (Molaire Consulting)

IS&T Executive Director: Suzanne E. Grinnan

staff at IS&T meetings and events, or just through email contact. I can assure you they are a great group of people working with us toward a common goal.

Last, but certainly not least it was my pleasure to send congratulations to IS&T member Marcel Verdooner on the anniversary of his 60th year as a member of the organization that became IS&T. I have been a member a mere 10 years so I look forward to working with the IS&T community for the next 50!

Respectfully submitted,



Alan Hodgson, president

IS&T REPORTER

Executive Editor: Peter Burns
 Managing Editor: Donna Smith
 Technical Editor: Ann McCarthy

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IS&T is an international organization dedicated to keeping constituents aware of the latest scientific and technological developments in the broad field of imaging through conferences, journals, and other activities.

IS&T focuses on all aspects of imaging, with particular emphasis on digital printing, electronic imaging, image perception, photo fulfillment, color imaging, image preservation, digital fabrication, and the physics and chemistry of imaging processes. For more information, visit imaging.org. IS&T publishes the *Journal of Imaging Science & Technology* and *Journal of Electronic Imaging* (with SPIE).

Please send inquiries to: info@imaging.org
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Answers to the puzzle found on page 12.



July 2013 – June 2014 MEETING DATA

Meeting: NIP29/Digital Fabrication 2013

Dates: September 29-October 3, 2013 / **Location:** Seattle, WA
General Chair: Steve Simske and Werner Zapka
Attendance: 398 (348 technical attendees)
Oral Papers: 132 **Interactive Papers:** 33
Short Courses: 14 **Exhibitors:** 29

Meeting: Color and Imaging Conference (CIC21)

Dates: November 5-8, 2013 / **Location:** Albuquerque, NM
General Chair: Clement Fredembach
Attendance: 143 (139 technical attendees)
Oral Papers: 31 **Interactive Papers:** 15
Short Courses: 15 **Exhibitors:** 3

Meeting: TDPF 2014 (5th Symposium on Technologies in Digital Photo Fulfillment) held as part of DIMA

Dates: January 5-6, 2014 / **Location:** Las Vega, NV
General Chair: Joe LaBarca
Attendance: varied by session
Oral Papers: 14

Meeting: Electronic Imaging Symposium 2014

Dates: February 2-6, 2014 / **Location:** San Francisco, CA
General Chairs: Sergio Goma and Shelia Hemami
Attendance: 926 (888 technical attendees)
Oral Papers: 524 **Interactive Papers:** 127
Short Courses: 14 **Exhibitors:** 10

Meeting: Archiving 2014

Dates: May 13-15, 2014 / **Location:** Berlin, Germany
General Chair: ChristophVoges
Attendance: 170 (143 technical attendees)
Oral Papers: 35 **Interactive Papers:** 19
Short Courses: 11 **Exhibitors:** 9

UPCOMING IS&T EVENTS

January 4 - 5, 2015; Las Vegas, Nevada

Technologies for Digital Photo Fulfillment

Symposium Chair: Joseph LaBarca

February 8 - 12, 2015; San Francisco, California

Electronic Imaging 2015 Symposium Chairs: Sheila Hemami and Choon-Woo Kim

May 19 - 22, 2015; Los Angeles, CA

Archiving 2015 General Chair: David Walls

September 27 - October 1, 2015; Portland, Oregon

NIP30/Digital Fabrication 2014 General Chair: Masahiko Fujii

November 2015; Darmstadt, Germany

23rd Color and Imaging Conference (CIC23)

General Chair: Vien Cheung

Learn more at www.imaging.org/ist/conferences/.
 A complete list of imaging-related meetings is at
www.imaging.org/ist/conferences/events.cfm

The Standards Roundup: Imaging and Graphic Arts

by Ann L. McCarthy, IS&T Standards Coordinator

Imaging Standards News

This *Imaging Standards News* is focused on both US national and international standards applicable to photographic imaging, including analog, digital, and print concerns.

ISO/TC 42 Plenary in 2015

The 2015 ISO/TC 42 Plenary will be hosted by the Japanese Industrial Standards Committee (JISC) and organized by the Photo Sensitized Materials Manufacturer's Association (PMMA), June 1 – 5, 2015, in Sapporo, Japan.

ISO/TC 42: Working Groups

In each of these working groups, experts are welcome to contribute through their corresponding national committees. For meeting details for the working groups listed below, please contact the Secretariat, isotc42@ansi.org.

Working Groups with current projects within TC 42

- WG 3, *Sensitometry, image measurement and viewing*; next meeting in Sapporo, Japan, in conjunction with the ISO/TC 42 Plenary, June 2 - 5, 2015.
- WG 5, *Physical properties and image permanence of photographic materials*; next meeting in Sapporo, Japan, in conjunction with the ISO/TC 42 Plenary, June 2 - 5, 2015.
- WG 18, *Electronic still picture imaging*; next meeting in Cupertino, CA, Feb. 4-6, 2015*, hosted by Apple Inc.

Working Groups with current projects, joint with other ISO and IEC committees:

- WG 8, Joint with TC 6, *Photographic film and paper products – Dimensions*; next meeting in Sapporo, Japan, in conjunction with the ISO/TC 42 Plenary, June 2 - 5, 2015.
- JWG 20, Joint with IEC, *Digital Still Cameras*; next meeting in Cupertino, CA, Feb. 4-6, 2015*, hosted by Apple Inc.
- JWG 23, Joint with TC 130 and CIE, *Extended colour encodings for digital image storage, manipulation and interchange*; next meeting in Cupertino, CA, Feb. 4-6, 2015*, hosted by Apple Inc.
- WG 25, TC 42/WG 18 joint with TC 130, *Use of XMP for digital photography*; next meeting in Cupertino, CA, Feb. 4-6, 2015*, hosted by Apple Inc.
- JWG 26, Joint with TC 46/SC 11 and TC 171, *Imaging system capability qualification for archival recording and approval*; next meeting in Cupertino, CA, Feb. 4-6, 2015*, hosted by Apple Inc.

* Note that these dates are just prior to the 2015 Electronic Imaging Symposium in San Francisco, CA, February 8-12, 2015.

News from current ISO/TC 42 Projects

Recent progress in standards development is reported for the following projects and action items:

- ISO/DIS 18938, Revision of ISO 18938:2008 (Ed. 1) — *Imaging materials — Optical discs — Care and handling for extended storage*, is in the publication stage.
- ISO/DIS 18943, *Imaging materials — Storage, Care and Handling of Magnetic Hard Disk Drives*, DIS has been approved for publication.
- ISO 18944:2014 (Ed. 2), *Imaging materials — Reflection colour photographic prints — Test print construction and measurement*, is published.
- ISO/DIS 17850, *Photography — Digital cameras — Geometric distortion (GD) measurements*, DIS ballot has received 100% approval. Comments received from ANSI and BSI will be addressed prior to publication.
- ISO/DIS 17957, *Photography — Digital cameras — Shading measurements*, DIS ballot has received 100% approval. This standard defines a method for measuring shading for use with digital cameras, including camera phones. Luminance shading (luminance non-uniformity within the image field) and colour shading (colour non-uniformity within the image field) are analyzed separately. Comments received from ANSI, NBN, and BSI will be addressed prior to publication.
- ISO/DIS 18383, *Photography — Digital cameras — Specification guideline*, DIS ballot has received 100% approval. This standard identifies the features that describe digital cameras and specifies definitions, measurement methods, and parameter value presentation methods for use on camera bodies, product packaging, etc. A comprehensive reference of related standards is provided in an annex. Comments received from ANSI, JISC, and BSI will be addressed prior to publication.
- ISO/NP 18948-1 and ISO/NP 18948-2, *Imaging materials — Photo books — Requirements for long-term permanence*, a ballot to combine these two new projects has been approved. The ballot was requested by WG 5, the working group developing the standard, after realizing that a majority of national body members is in favor of developing ISO 18948 as one standard.

Progress in JWG26, Imaging system capability qualification for archival recording and approval

A working draft of ISO/TS 19263, *Photography — Archiving Systems — Best practices for digital image capture of cultural heritage material*, has been circulated for comment. This specification tackles the fundamental challenge to define the technical

parameters necessary to creating a functional digital surrogate of original heritage material. Although the work is presented in the context of cultural heritage, the discussion has bearing on any digitization in which reproduction quality is a concern. The digital master produced, a use-neutral image file, is termed as “scene referred” or “original referred” because it is intentionally faithful to the original, with no built-in assumptions regarding a future output medium.

The methods of the specification pertain to a variety of 2D objects, with the proviso that complex surface geometry and goniometric properties are not addressed. Camera selection is a first priority and the WD contains an interesting table showing camera sensor size vs. the recommended upper limit original size, for a resulting image recording 300ppi or 400ppi.

Cameras and scanners considered for such work should provide the user with access to ICC color configuration parameters (user selectable color spaces and custom ICC profiles), should have flat-fielding capability, and should have the capability to define a true linear L^* tone curve. The scanner or digital camera and related host software must support ICC workflows as defined in ISO 15076-1:2010, *Image technology colour management — Architecture, profile format and data structure — Part 1: Based on ICC.1:2010*, which is the ICC V4 specification. The working draft includes methods to characterize the resolution, uniformity, distortion, noise, color registration, dynamic range and OECF, and color of the capture system.

The committee has noted that one objective of this technical specification, a collaboration among several cultural heritage institutions, is to encourage more widespread adoption of device features that are important for cultural heritage imaging.

US Imaging Standards Revisions

IS&T Imaging Technology (IT) Committee 10 has initiated ANSI Standards Actions to reaffirm two standards.

BSR/IS&T IT10.2000-201x, *Photography - Digital still cameras - JPEG 2000 DSC profile* (new standard):

This document specifies a profile of JPEG 2000 suitable for use in digital still cameras (DSC profile). The profile specifies the following items: Decoder/Reader conformance requirements for software and hardware devices (including the camera itself) that desire to read images captured on JPEG-2000-based digital still cameras (DSC). This includes both codestream, file format, and Encoder/Writer conformance requirements for the files created by digital still cameras. NOTE: This is a reaffirmation of the former ANSI/I3A IT10.2000-2004 standard. Purchase an electronic copy from: webstore.ansi.org.

BSR/IS&T IT10.7000-201x, *Photography — Digital still cameras — Guidelines for reporting pixel-related specifications* (new standard):

This standard specifies guidelines for reporting pixel-related specifications (e.g., the number of camera pixels) of a digital still

camera, for the purposes of camera labeling, camera packaging, advertising, and the like. It is applicable to monochrome and color digital still cameras using one or more image sensors. NOTE: This is a reaffirmation of the former ANSI/I3A IT10.7000-2004 standard. Purchase an electronic copy from: webstore.ansi.org.

Updates from the CIE

The International Commission on Illumination invites world practitioners in light and lighting to present and participate in its 28th Session, to be held in Manchester, at the University of Manchester, in the United Kingdom, June 28–July 4, 2015. Every four years, a CIE Session brings together those interested in the CIE’s technical activities to learn about the latest advances in related science and industry. The abstract submission period is now open. More information is available at <http://session2015.cie.co.at/>.

As mentioned in this column previously, the United Nations has declared 2015 the International Year of Light. In support of this action, the CIE is planning a Global Open Lab Day. Around the world, laboratories involved with lighting science and technology, optical radiation, astronomy, and related topics, are invited to open their doors to the general public, to demonstrate advances in lighting and why lighting matters in our lives. The CIE has chosen May 9 – May 25, 2015 for this worldwide event. Each laboratory that would like to participate is asked to submit their information (including selected date(s), daily times, location, an abstract of activities, hyperlink to their webpage, contact person, etc.) to the CIE organizing committee. The CIE will publicize the participants’ laboratory event through their website. This may be a first in the history of the world, a focused time period to explore a chosen science in collaboration across the globe. To register go to www.cie.co.at/index.php/IYL+2015 and choose the “Registration Form” link.

Scientists, engineers, lighting practitioners, and students in related fields in the US are invited to join CIE/USA. Not least among the benefits of membership is the 67% discount on international CIE publications. The CIE is an independent, non-profit organization devoted to worldwide cooperation and the exchange of information on all matters relating to the science and art of light and lighting, color and vision, photobiology and image technology. The CIE is distinct among technical and standards organizations in that it sponsors both open technical meetings for the advancement of the science, and standards committees that codify the consensus findings. Links to each CIE National Committee are found here www.cie.co.at/index.php/LEFTMENU/index.php?i_ca_id=234.

ICC Color Management News

ICC DevCon 2014 will be held in Boston, MA, on November 3, 2014, collocated with the IS&T Color and Imaging (CIC) Conference. This year will focus on the ICCLabs work within the

ICC, which enables new ways of openly communicating about light, color, and appearance.

The appearance matching profile from the sRGB color space to the ICC V4 Perceptual Reference Medium Gamut (PRMG) has completed beta testing and is ready for general distribution. This profile is suited for general use in ICC V4 workflows, replacing the common sRGB V2 profiles.

Unlike with typical ICC V2 color management, in which the sRGB V2 profile simply re-encodes colors into the ICC connection color space and relies on the subsequent output profile for rendering, in ICC V4 color management the sRGB V4 profile can play a role in determining color appearance in the output. Keep in mind that sRGB natively displays colors mapped for a CRT display. When the chosen output is a different display or medium, re-mapping the colors can enhance the results, particularly with saturated color content. The goal of this appearance matching profile, as the name suggests, is to improve consistency among multiple outputs— all intended to be pleasingly similar to the original. In color management workflows with this objective, V4 output profiles should be developed to work with colors produced by the sRGB V4 profile's perceptual rendering intent, rather than assuming the full job of rendering from an sRGB source. More information on this and other ICC sRGB V4 profiles is available at <http://www.color.org/srgbprofiles.xalter>.

Graphic Arts Standards News

Graphic Arts Standards News covers US national and international standards applicable to ISO Technical Committee 130 (Graphic Technology), which develops international standards for the graphic arts industry. This standards news is brought to you in collaboration with NPES, The Association for Suppliers of Printing, Publishing and Converting Technologies. NPES serves as the Secretariat for the US TAG to ISO/TC 130 (Graphic Technology). The Secretariat for ISO/TC 130 is held by China. The membership of TC 130 includes 27 P-member countries and 18 O-member countries. The 29th meeting of ISO/TC 130 will take place Nov 14-20, 2014 in Beijing, China.

Of broad interest to those involved with graphic arts industry standards development, in July 2014 the task force, TF3 — Workflow standards roadmap, which was created in TC 130 at the 2012 Plenary, issued a documented proposal of future standardization structure and work for ISO/TC 130. Along with this document, ISO/TC 130/ TF3 N0027, the task force is investigating the following questions:

- Does the structure proposed meet the needs of the graphic arts market for the future?
- Which standards should be revised, improved, canceled?
- Are there any gaps that are not covered by the new structure?

N0027 grapples with the workflow and technology changes ongoing in the graphic arts market, and with the need to periodically reconsider all stakeholders. For those more recently engaged in graphic arts standards, N0027 contains informative

charts describing the relationships among the various existing standards and the working groups.

ISO/TC 130*: Working Groups

The ISO/TC 130 2014 Working Group and Plenary meetings is scheduled for Beijing, China, November 14 – 20, 2014. The agenda and meeting details can be found at www.npes.org/programs/standardsworkroom/upcomingevents/tc130workinggroupsplenarymeetings.aspx.

Joint CGATS/USTAG/IDEAlliance PPC Activities**

A CGATS/USTAG/ IDEAlliance PPC meeting took place in Hanover Park, IL, October 13–15. It will be reported on in the next issue of *The Reporter*.

News from current ISO/TC 130 Projects

For your information the following ISO standard has been published recently and is available for purchase from ISO, ANSI and other national bodies. This standard can also be purchased from NPES.

- ISO 12647-4:2014 (Ed. 2), *Graphic technology — Process control for the production of half-tone colour separations, proof and production prints — Part 4: Publication gravure printing*, was published July 7, 2014. Part 4 is one of 8 process control standards developed in TC 130. Part 1 defines generally applicable parameters and measurement methods and Parts 2 – 8 each deal with a specific distinct print technology.

Recent progress in standards development is reported for the following projects and action items:

- The DIS ballot for ISO/DIS 18619, *Image technology colour management — Black point compensation*, was approved with no negative votes. Comments were submitted from two national bodies. The project editor is preparing the resolution of comments.
- The DIS ballot for ISO/DIS 16760, *Graphic technology — Prepress data exchange — Preparation and visualization of RGB images to be used in RGB-based graphics arts workflows*, was approved with one negative vote. Comments were submitted from five national bodies. The negative vote and associated technical comments identify a concern that the perceptual rendering intent in the ICC profile of the workflow is not standardized and recommends a change in the scope

* ISO/TC 130 is organized into working groups with convenor and assistant convenor responsibilities assigned to national bodies. The US serves as the convenor or secretary of several working groups. In each of these areas, experts are welcome to contribute through their corresponding national committees. For details pertaining to ISO/TC 130 working groups contact the TC 130 Secretariat through your national standards organization. In the US, contact the ISO/TC 130 US TAG Secretariat at www.npes.org/programs/standardsworkroom/tc130theustag.aspx

** Within the US, positions and contributions for ISO/TC 130 are coordinated through joint meetings of CGATS (Committee for Graphic Arts Technology Standards), the ISO/TC 130/US TAG, and the Print Properties & Colorimetrics (PPC) Committee, a working group of the IDEAlliance.

of the standard to exclude proof printing from colorimetrically defined RGB data. In the resolution of comments, this comment was accepted in principle. With that adjustment and other corrections according to comments received and resolved, the negative vote was changed to approval. During the recent WG2 meeting in London, it was agreed that the prepared document will proceed to publication..

- A DIS ballot has been initiated for ISO/DIS 17972-4, *Graphic technology — Colour data exchange format (CxF/X) — Part 4: Spot colour characterisation data (CxF/X-4)*, to close on Nov 11, 2014.
- A DIS ballot has been initiated for ISO/DIS 2834-2 (Ed. 2), *Graphic technology — Laboratory preparation test prints — Part 2: Liquid printing inks*, to close on Nov 12, 2014.
- The updated ISO/DIS 12646 (Ed. 3), *Graphic technology — Displays for colour proofing — Characteristics*, with incorporation of comments from the successful DIS ballot, closed April 29, 2014, was circulated for review on July 10, 2014. The comment period ended Sept 30, 2014.
- The updated ISO/DIS 14861, *Graphic technology — Requirements for colour soft proofing systems*, with incorporation of comments from the successful DIS ballot, closed May 20, 2014, was circulated for review on July 10, 2014. The comment period ended Sept 30, 2014.
- A second CD ballot was conducted for ISO/CD 16763.2, *Post-press — Requirements for bound products*, due to the significant changes following the first CD ballot. This standard specifies quality requirements and related tolerances for bound products and intermediate components.
- In ISO/TC 130/WG 13 (Printing Conformity Assessment Requirements), a WD of a *Colour quality management certification scheme*, has been circulated for comment. This standard sets requirements for a Colour Quality and Production Management System as specified in ISO 9001, and aims to establish a certification process for international colour quality.

International Organization for Standardization (ISO) News

ISO has recently announced the *ISO/IEC Directives Part 1 and Consolidated ISO Supplement – 2014 (5th edition)*, which is now available online at www.iso.org/directives. Here is a synopsis of key changes of particular interest to IS&T Imaging Technology Committee members, provided by the ISO/ TC 42 Secretariat:

Leadership

- Technical Committee Chairs can serve for a maximum of 9 years.
- Secretariat responsibilities include ensuring that decisions taken at meetings contain the specific elements being endorsed and are posted to the ISO site within 48 hours.
- Working Group Convenors are appointed by the parent committee for up to a 3-year term and can be re-appointed with no limit to the number of terms.

- Parent committees must pass resolutions at their next plenary meeting confirming the reappointment of convenors who have served for 3 or more years.

Joint working groups

- The JWG parent committee with administrative responsibility is responsible for addressing comments, usually by referring the comments to the JWG.
- When a JWG spans two or more ISO committees, only one NWIP is needed. Between ISO and IEC, a NWIP ballot will be issued in each organization. A CD ballot is circulated in each committee and requires consensus support in each committee. A DIS ballot is circulated once to ISO NSBs with the request that each NSB consult all national mirror committees to obtain a single national position.


Project timelines

- If a project is not meeting its target dates, the parent committee may apply to the ISO/TMB for an extension of the project date limits, but is limited to one 9 month extension.
- Any preliminary work item that has not progressed to NWIP ballot within 3 years will be deleted from a committee's work program.
- As an alternative to a NWIP ballot for the revision of an existing document, a committee may pass a resolution containing the proposed target dates, a confirmation of the unchanged scope, the identification of the project leader, and the call for experts.
- For a particular new project, the committee may pass a resolution to shorten the NWIP voting period to 2 months.
- The CD stage can be skipped, given WG Convenor and WG consensus, and a consensus decision in the parent committee. In this case, the WG should have developed international consensus during the Working Draft stage and the document submitted to the parent committee should be suitable for a DIS ballot. A full review of DIS comments is required.
- If conducted, the default CD ballot voting period is now two months.
- The FDIS ballot is skipped by default when a DIS is approved.

Systematic reviews

- At least 5 countries must indicate that they have adopted or used a particular standard during the Systematic Review. If not, the standard should be withdrawn, regardless of the outcome of the SR vote. Where voting results are not definitive and/or a decision is based on interpretation of responses, the secretariat may invite approval of a proposed course of action within a specified time delay, for example within two months.

For questions about the activities of TC 42, for suggestions for (or input to) future updates, or standards questions in general, please contact the IS&T Standards Coordinator at standards@imaging.org.



**International Symposium
on Technologies for
Digital Photo Fulfillment**

View the program at
www.imaging.org/ist/conferences/tdpf
Register using ISTMem code via
www.pmai.org

January 4-5, 2015
Bally's Hotel
Las Vegas, Nevada

IS&T/ SPIE

**Electronic
Imaging**

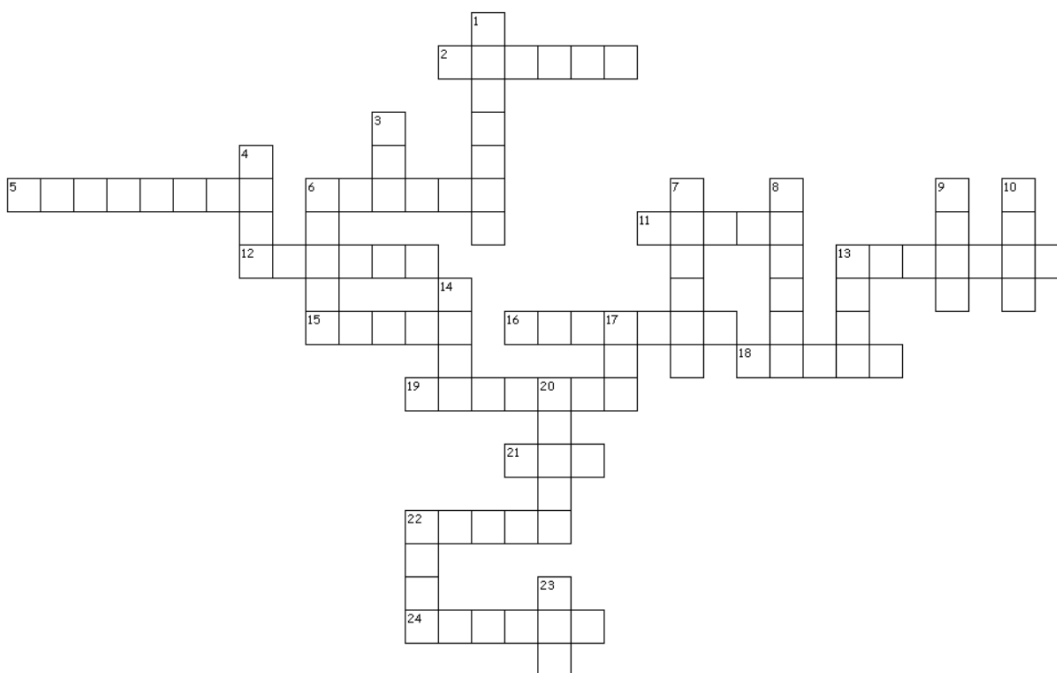
SCIENCE AND TECHNOLOGY

February 8 - February 12, 2015
San Francisco, California

View the program via
www.imaging.org/ist/conferences/ei
Register will open soon via the same link

IS&T Crossword Puzzle

Peter Burns



Across

2. Home of ISO
5. What the P in NIP stood for
6. (Most) Canadians see **in** this way; also the British and Australians.
11. Newest IS&T chapter
12. ‘Sound and _____’
13. Imaging company renamed in 1984 as _____ Electronics
15. Spanish word for natural building material
16. RIT’s color science lab
18. Monochrome, color, multi-spectral, _____ - spectral
19. Hewlett’s partner
21. Institute that studies durability of imaging materials
22. R in HDR
24. Predecessor to Xerox

Down

1. First syllable of this printer company’s name means ‘law’ in Latin
3. The C in this IS&T sustaining corporate member’s name originally stood for ‘computer’
4. Color and more conference in Europe
6. Canon’s outfit in ‘Oz’
7. Settler of bets and now a verb
8. First author of the book, ‘image science’
9. The basic idea, and an IS&T publication
10. Polaroid’s Edwin
13. Partner for Electronic Imaging Symposium
14. ‘Face’ of image processing
17. Former partner for IS&T’s color conference, CIC
20. Calls Cupertino home
22. Bob Hunt’s initials
23. Perhaps surprisingly, the C in its initials does not stand for colour