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ARCHIVING 2013

Best Interactive Paper

An OCR Concept for Historic Prints

Ursina Caluori and Klaus Simon, Swiss Federal Laboratories for Materials Science and Technology (EMPA, Switzerland)

Abstract: We present a new concept for the recognition of single characters, the core component of every OCR-System. The recognition is organized as pattern matching with on-the-fly generated patterns corresponding to the glyphs of a given computer font. Thereby, the set of currently considered fonts can be chosen and exchanged arbitrarily which allows a flexible adaption of the software to each specific task, in particular the needs of historic prints.

Photo: Michel Molaire.

Joanne Weber has served as Secretary (and unoffical historian) of the Rochester Chaper for 40 years. She was honored with a President's Citation at the Chapter's June meeting for her dedication.

Where the OAIS Ends: Archival Principles and the Digital Repository

Maygene Daniels, National Gallery of Art (USA)

Abstract: The OAIS reference model (ISO 14721:2012) has been widely accepted as a theoretical foundation for digital archives, but there has been relatively little discussion of internal elements of an OAIS-compliant repository in the context of traditional archival theory and practice. Based on the experience of the archives of the National Gallery of Art, this paper presents practical concepts for creating a small digital archival repository within the OAIS framework built on recognized archival principles of provenance, group level management, and hierarchical organization.

HADARA—A Software System for Semi-Automatic Processing of Historical Handwritten Arabic Documents

Werner Pantke, Volker Märgner, Daniel Fecker, and Tim Fingscheidt, Technische Universiät Braunschweig (Germany); Abedelkadir Asi, Ofer Biller, and Jihad El-Sana, Ben-Gurion University of the Negev (Israel); Raid Saabni, Tel-Aviv University and Triangle R&D Center (Israel); and Mohammad Yehia, Triangle R&D Center (Israel)

Abstract: Recently, many big libraries all over the world have been scanning their collections to make them publicly available and to preserve historical documents. We present a modular software system which can be used as a tool for semi-automatical processing of historical handwritten Arabic documents. The development of this system is part of the HADARA project which aims for historical document analysis of Arabic manuscripts and consists of a project team including engineers and computer scientists but also users such as linguists and historians. The HADARA system is designed to support script and content analysis, identification, and classification of historical Arabic

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

* *These papers were presented at the IS&T Archiving Conference, held April 2-5, 2013, in Washington, DC.*

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documents. The system has been created following an iterative development approach, and the current version assists the user in an interactive and partially already in an automatic manner. In this paper, a system overview is given and the first modules are presented which support the annotation of a scanned manuscript in a semi-automatic manner. They comprise page layout analysis, text line segmentation, and transcription. Word spotting is the first application implemented in the HADARA system and its concept is outlined in this paper.

Adoption of Infrastructure-as-a-Service at the National Library of New Zealand

Cynthia Wu, National Library of New Zealand (New Zealand)

Abstract: The National Library of New Zealand, along with Archives New Zealand, is part of the wider Department of Internal Affairs (DIA). The DIA has been charged by government with being the lead agency for cloud technology and implementation of Infrastructure-as-a-Service (IaaS). The National Library of New Zealand, in particular its digital preservation programme, the National Digital Heritage Archive (NDHA) is one of the early pilot groups in the IaaS project. This paper will seek to illustrate some of the main drivers and rationale behind the adoption of IaaS and the selection of NDHA as the pilot group. It will examine the concerns expressed by various stakeholders within the National Library, such as infrastructure availability, performance, security, support. Furthermore, it will explore the issue of trust and how this can be managed in order to ensure the continued care of digital objects with significant cultural value. By analysing in detail the scope, processes, and resources required within each distinct phase of the project, this paper will demonstrate both the infrastructure migration method and the consideration put in place to alleviate identified risks and concerns.

Digitization Standards at the National Archives and Records Administration

Jeffrey Reed, Kate Murray, and Martin Jacobson, NARA (USA)

Abstract: The US National Archives and Records Administration (NARA), through the Digitization Planning Branch in the Office of Innovation, is developing flexible and appropriate agency-wide standards for digitization in order to advance NARA's goal of making its holdings more available. Recognizing that there is no single answer to the question "what format should I use," this effort uses the One Touch and Fit For Purpose concepts to document file format and attribute choices that will meet a variety of known and expected uses for the digitized material.

Focusing on a collection of use cases, this paper examines the essential components of the effort: characterizing customer groups including file creators and file consumers, defining the intended uses for digitization products, designing digitization products to satisfy these needs, and finally, packaging the standards information at an appropriate level of complexity for a variety of user communities. The effort reflects a broader agency-wide approach to systematic digitization and acknowledges the growing effectiveness of distributed digitization including utilizing commercial partners, crowd-sourcing and other community-driven initiatives.

Cross Media Preservation Planning

Rod Butler, Mick Newnham, Greg Moss, Ian Gilmour, and Danny Dawson, National Film and Sound Archive Australia (Australia)

Abstract: Audio-visual media have recorded the 20th century in way no other era has been recorded. Film, audio and video have enabled significant people and events to be witnessed by millions of people. The problem of preserving this amount of information in the original analogue formats has been monumental and despite the best efforts only a fraction of the original recordings made survive worldwide. The skills required to adequately preserve and make accessible the remaining records have been honed for only the past two decades. And now the world has moved into the digital realm.

This has engendered a new set of problems and demanded audio-visual archivists acquire a new set of skills while still requiring the original skills to manage the legacy collections. The costs required to digitise a legacy collection are largely beyond reach of all but the best resourced archive, and yet this is required if a collection is to be preserved and accessible. Consequently hard financial decisions about the way a collection is to be managed into the future need to be made by those responsible. Risk management is a crucial part of the decision making process.

Digital collection preservation requires more than the creation of digital surrogates. It is a continuum starting with ensuring the original file is intact, the development of strategies for managing the changing environment of files types and hardware evolution, and minimising the potential for loss by negligence or malicious attack.

The prioritization of collection digitization needs to take all of these factors into consideration in order to balance a collection's preservation needs with its potential for access and exploitation. Issues such as technical obsolescence, succession planning and risk analysis need to be considered along with the organization's strategic business needs such as revenue potential and key stakeholders.

This presentation will outline how the National Film and Sound Archive of Australia developed a strategy for the prioritization of all collection items in a consolidated manner that recognized efficiencies and synergies, developed new workflows, harnessed the potential of new technologies, addressed at risk priorities and provided for long term planning. ▲

Tenth Archiving Conference Stimulates DC

By Peter Burns, Conference Chair (Burns Digital Imaging)

Our tenth IS&T Archiving Conference was held April 2-5 2013, in Washington DC, during the Cherry Blossom Festival—a great time for visiting the city. The conference was held in the National Archives and Records Administration (NARA) building on the National Mall, where several important historical documents are on display. The conference was organized in a single track of 41 oral- and 17 poster-presentations, and attracted approximately 200 attendees.

Photo: Christoph Voges.

Bringing together a cohesive, interesting, and relevant program requires the effort of many committed people, including authors/speakers, reviewers, session chairs, and program chairs. Members of the Archiving 2013 Technical Program Committee: Kit Arrington, David Wall, Felix Kong, Kari Smith, Jonas Palm (in back), Scott Geffert, Kathleen Murray (Short Course Chair), Peter Burns (General Chair), Christoph Voges (Program Chair), Larry Telford, Phil Michel, Kathrine Hougaard, Ken Rahaim, Kate Zwaard, and Megan Phillips. Missing: Priscilla Caplan, Paul Conway, Karl-Magnus Drake, Erik Landsburg, Steven Puglia, Ken Rahaim, Manfred Thaller, and Helen Tibbo.

Special Events

New this year, a condensed CURATEcamp session was organized by Meg Philips, and facilitated by her, Kate Murray and Mike Horsley, all from NARA. CURATEcamp events are well-established in the archiving community. Following introductions, the participants summarized their most pressing concerns on the subject, Digitized/Born Digital Together. They then proposed several specific discussion topics. From fourteen separate topics, several were combined to form the eight that were discussed in several smaller sessions. This activity provided a good way of taking the pulse of the digital preservation community, and helped identify areas of emerging standard practice and others where it is needed.

Photo: Christoph Voges.

Chief Records Officer for the US Government Paul Wester opened the conference with his keynote on the Presidential Memorandum on Managing Government Records.

The CURATEcamp generated discussions on the following topics: open access to digital media, cooperative digital curation and crowdsourcing, rights issues and privacy, curating born-digital material, laser scans of 3D objects, records-management for electronic records preservation, formats and normalization, integrity and authenticity, and preserving the look and feel of digital objects. The schedule of sessions held and notes of the discussions were captured on a wiki (see box). Participants shared what they knew, learned from others, and made connections with their colleagues that they can follow up on in the future. For many, it was a very engaging way to kick off the Archiving 2013 conference.

After the CURATEcamp, conversations continued at the nearby Iron Horse Taproom. Other social activities included a conference reception on Wednesday at the Wooly Mammoth Theater, and tours of the National Gallery of Art and the Library of Congress.

CURATE CAMP WIKI LINK
http://wiki.curatecamp.org/index.php/IS%26T_Archiving_Conference_CURATEcamp_2013

ARCHIVING 2013

Attendees*:	207
Oral Papers:	43
Interactive Papers:	16
Short Courses:	8
Exhibitors:	2
Dates:	April 2-5, 2013
Location:	Washington, DC

*includes Short Course only and guests

Keynote Talks

The conference opened with a keynote by Paul Wester, Chief Records Officer for the U.S. Government, who was introduced by conference Program Chair, Christoph Voges. The talk, "21st Century Transformation: the Presidential Memorandum on

Managing Government Records, and its Implications", focused on the transition to electronic records. Following his talk, Mr. Wester answered several questions about how this would be organized with input from the various communities.

A second keynote was presented on the last day of the conference by Carl Stephan (Univ. of Adelaide) and Doug Munson (Chicago Albumen Works). Their talk, "Identification of US POWs and MIAs from the Korean War via the recovery and digitization of deteriorated acetate x-rays," reported on work completed for the US Department of Defense's Central Identification Laboratory (JPAC-CIL). JPAC-CIL and the Chicago Albumen Works collaborated to restore deteriorated radiographs. Stephan is a forensic anthropologist who worked directly with the identification.

Short Courses and Technical Sessions

This year the usual full day of short courses were offered in shortened form, to accommodate the half-day CURATEcamp session. Short Course Chair, Katherine Murray (Univ. of North Texas) organized a strong program of seven topics, several of which were new this year. The morning went well, with a larger number of course attendees than for previous conferences.

The conference was organized in two interactive sessions, and 12 oral sessions. The interactive papers covered a wide range of topics, presented as posters in an informal way enjoyed by both attendees and authors. The Obsolete Media Award for the best interactive presentation went to Ursina Caluroi and Klaus Simon (Swiss Federal Laboratories for Materials Science and Technology) for "An OCR Concept for Historic Prints."

Oral sessions were organized in nine areas, starting with Jonas Palm chairing Digital Preservation. We heard about born-digital stewardship, cost models, creating archives within the OASIS framework, and planning for audio-visual preservation by Rod Butler of the Australian National Film and Sound Archive.

Photo: Christoph Voges.

Carl Stephan and Doug Munson's keynote on identifying US prisoners of war and missing in action servicemen from the Korean War via the digitization of deteriorated x-rays was a unique look at the intersection of archiving and forsensic anthropology.

Our conference continued with Arts & Archiving, chaired by Erik Landsberg, and the first of two sessions on Imaging Technology. Subsequent technical sessions included Film as a Storage Medium, chaired by Don Williams, and Imaging Technology II with Christoph Voges. This session included a report on progress of the CIE Committee on Archival Colour from Rob Buckley. His presentation, co-authored by Steve Puglia, described the results of a multi-institution study of current color image capture, which will be completed by early 2014.

Kit Arrington chaired the second Digital Preservation session which included Cynthia Wu, a frequent speaker from the National Library of New Zealand, presenting an Infrastructure-as-a-Service approach to digital preservation. One element of this approach, developed in response to funding limitations, is the adoption of cloud computing and storage. The session also included a presentation on the evolution of the Metamorfoze program for paper heritage by Marg van der Burgh – with musical accompaniment.

The Metadata and Access session was then chaired by Paul Conway, which finished with Fenella France's presentation on linking large sets of cultural heritage data. The datasets include multispectral images and the results of material identification and classification.

Recurring topics in this conference series are the development and use standards, both for imaging, and digital archiving in general. This continued with the Standards and Guidelines session, chaired by Scott Geffert. continues top of page 8

Photos: Christoph Voges.

Larry Telford (left) announces the winners of the Obsolete Media Award for Best Interactive Paper; the winners (above) with Archiving 2013 General Chair Peter Burns.

Photo: Christoph Voges.

The National Archives and Records Administration (NARA) hosted Archiving 2013 at their lovely building on the National Mall in Washington, DC.

Photo: Michel Molaire.

IS&T President's Annual Report — July 1, 2012 to June 30, 2013

As I sat down to reflect on the past year and write my second and final report as President of IS&T, the theme that comes to mind is change. There have been changes in the communities and markets we serve and in our online presence, awards, and outreach. There have been changes in how the Board of Directors operate, which may not be visible to the membership although their consequences should be. And there are the changes in our conference offerings planned for the next year or two. These changes are being driven by the Board, by empowered conference committees, and by committed members. In this report, I want to tell you about their contributions, what they've accomplished, and what you can look forward to.

The backdrop to all this are the changes in the imaging industry and in the communities we serve, and the role of IS&T in the link between them, now and in the future. That role is summed up in a mission statement prepared by the Board:

The mission of IS&T is to provide an international forum for business advancement, sharing of expertise, and education to those engaged in the science, technology and engineering of Imaging through the provision of publications, conferences, and other meetings and media vehicles.

There are the three services we provide—business advancement, sharing of expertise, and education; the three groups we provide them to—scientists, technologists, and engineers in the field of imaging; and three ways we do it—through publications, conferences, and media vehicles, such as imaging.org and social media.

A major change during the past year and still ongoing is the migration of our digital library from imaging.org to IngentaConnect; the *Journal of Imaging Science and Technology* (JIST) back to 1996 and proceeding papers from Archiving, CIC, CGIV, and TDPF are now available on IngentaConnect. This change was in response to requests for better searchability of the digital library. You can expect to see more changes to imaging.org as it evolves toward a website better matched to our needs and capabilities and where TC 42 Photography resources have a greater presence.

One role of IS&T is recognizing those who have contributed to the field of imaging and to the Society. This year 33 people are receiving awards. Al Bovik, the Curry/Cullen Endowed Chair in the Department of Electrical and Computer Engineering of the University of Texas at Austin, will receive Honorary Membership, our highest award. Yoshihiko Shibahara, senior technical manager in R&D at FUJIFILM Corporation, received the HP Image Permanence Award. This is the last year this award will be given out and I am pleased to acknowledge Hewlett-Packard's generous sponsorship of this award.

New this year is the Image Engineering Innovation Award, sponsored by Image Engineering GmbH & Co. KG to recognize advances in digital imaging with an emphasis on image capture. The first recipients of this award are Ren Ng, the founder of Lytro, and Christian Perwass and Lennart Wietzke, the co-founders of Raytrix, recognized for their contributions to light field cameras. I can't help but observe that this represents a shift in our sponsored awards away from image output and towards

July 2012 – June 2013 MEETING DATA

Meeting: NIP28/Digital Fabrication 2012
Dates: September 9-13, 2012 / **Location:** Quebec City, Quebec, Canada
General Chair: Scott Silence (NIP) and Paul Benning (Digital Fab.)
Attendance: 415 (360 technical attendees)
Oral Papers: 126
Interactive Papers: 23
Short Courses: 16
Exhibitors: 33

Meeting: Color and Imaging Conference (CIC20)
Dates: November 12-16, 2012 / **Location:** Los Angeles, CA
General Chairs: Stephen Westland and Xuemei Zhang
Attendance: 180 (166 technical attendees)
Oral Papers: 35
Interactive Papers: 25
Short Courses: 14
Exhibitors: 1

Meeting: TDPF 2013 (4th Symposium on Technologies in Digital Photo Fulfillment) held as part of DIMA
Dates: January 8-9, 2013 / **Location:** Las Vega, NV
General Chair: Joe LaBarca
Attendance: varied by session
Oral Papers: 11

Meeting: Electronic Imaging Symposium 2013
Dates: February 3-7, 2013 / **Location:** Burlingame, CA
General Chairs: Gaurav Sharmai and Sergio Goma
Attendance: 1055 (1006 technical attendees)
Oral Papers: 589
Interactive Papers: 103
Short Courses: 16
Exhibitors: 7

Meeting: Archiving 2013
Dates: April 2-5, 2013 / **Location:** Washington, DC
General Chair: Peter Burns
Attendance: 207 (187 technical attendees))
Oral Papers: 43
Interactive Papers: 16
Short Courses: 8
Exhibitors: 2

image input. The list of this year's award recipients is available on imaging.org.

I also gave out a President's Citation this year to Joanne Weber in recognition of her 40 years of service as Recording Secretary of the Rochester Chapter of IS&T. Even as we look to the future, it is fascinating to hear the story of our past, which under Joanne's guidance (and with reference to her 1997 paper at the 50th Annual Meeting) can be traced back through SPSE and SPE to the Technical Sections of PSA, with a flirtation with SMPTE along the way.

That's where we came from. Where are we going? There are internal and external activities to tell you about. Externally, the IS&T was a partner at SmartLighting 2013 in May in Frankfurt; had a booth at LOPE-C, the Large-area, Organic and Printed Electronics Convention in June in Munich; and will be sharing a booth with Diginova, the EU Project on Digital Fabrication, at the International Conference on Additive Manufacturing & 3D Printing this July in Nottingham, England. All this is to increase awareness of IS&T and to support continuing and future exchanges. The IS&T Technologies in Digital Photo Fulfillment (TDPF) conference, now an annual meeting, was part of PMA, which was co-located this past January with the Consumer Electronics Show (CES) in Las Vegas.

Last year IS&T added a new chapter in Korea. This year, Samsung Electronics has announced that they will become a sustaining corporate member of IS&T, joining Adobe, Canon, Hewlett Packard, Lexmark, and Xerox.

The IS&T Archiving Conference, held this year at the National Archives and Records Administration in Washington, DC, has been stable in terms of attendance and finances. Next year it will be held in Berlin, continuing the pattern of even-year conferences in Europe. The Electronic Imaging (EI) Symposium, co-sponsored with the SPIE, is also stable. However, changes are in the works as its leadership is preparing for the revolutionary shift that is happening in visual data capture. They are making plans to encourage interdisciplinary communication that will foster the creation of this new field and bring together academia and industry for a clear path to sustainability through novel applications. It is good to see this kind of thinking and to report that it is infusing our other conferences.

While Archiving and EI are stable, the Color and Imaging Conference (CIC), European Conference on Colour in Graphics, Imaging, and Vision (CGIV), and NIP/Digital Fabrication have seen declines in attendance in the past few years due to challenges facing the segments of the imaging industry they serve. A committee of young imaging professionals is exploring ways to enhance the color conference, including the creation of a single annual color event. Their task is to envision an international color conference that meets the needs of attendees into the 2020s. Changes in NIP/Digital Fabrication are already underway.

IS&T 2012 Financial Statement

STATEMENT OF INCOME

Fiscal Years Ending December 31, 2012 and December 31, 2011

	2012	2011
INCOME		
Conferences	$1,172,759	$$1,179,436
Publications	531,681	566,330
Membership	93,695	107,014
Standards	135,642	174,305
Other	14,265	31,196
Total Income	$1,948,041	$2,058,281
EXPENSE		
Conference	$1,301,901	$1,252,694
Publications	511,291	486,984
Membership	92,410	86,715
Standards	125,169	125,433
Other	42,838	42,639
Total Expenses	$2,073,609	$1,994,465
Net Operations	(125,568)	63,816
Investment Income	40,575	27,030
Realized Gain (Loss)	106,709	(61,086)
NET INCOME (Loss)	**$21,715**	**$29,760**

Balance Sheet Notes

1. Income (Loss) from operations in 2012 was $(125,568).
2. IS&T's 2012 Annual Report is available to members upon request.

Statement of Income Notes

General Administration and Labor allocations in 2012 were as follows: publications 19%; meetings 71%: membership 6%; standards 4%. These percentages were applied to administration and labor expenses to determine a net gain (loss) for publications, meetings, membership, and standards.

IS&T's investements 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, 2012, these investments had a market value of $1,616,728 (in 2011 valued at $1,579,359).

BALANCE SHEET

Fiscal Years Ending December 31, 2012 and December 31, 2011

ASSETS	2012	2011
Current Assets		
Checking and Petty Cash	$ 69,210	$ 324,206
Money Market / CD's	489,189	788,416
Investments	1,305,748	1,176,996
Accounts Receivable	13,993	47,362
Book Inventories	105,046	107,275
Prepaid and deferred expense	84,078	71,864
Total Current Assets	*$2,067,264*	*$2,516,118*
Property and Equipment		
Land	$29,000	$29,000
Building and Improvements	156,291	156,291
Furniture and Equipment	118,513	269,403
Subtotal	303,804	454,694
Less Accumulated Depreciation	(254,787)	(398,617)
Total Fixed Assets	49,017	56,077
TOTAL ASSETS	$2,116,281	$2,572,195
LIABILITIES AND FUND BALANCES		
Liabilities		
Accounts Payable	$43,400	$321,798
Accrued Expenses	56,421	57,807
Due to Chapters	48,335	37,903
Deferred Income, Dues, Subs., Mtgs.	222,547	430,823
Total Liabilities	*370,703*	*848,331*
Equity		
Unrestricted	$1,661,381	$1,648,573
Davis Scholarship Fund	84,198	75,291
TOTAL LIABILITIES AND EQUITY	$2,116,281	$2,572,195

NIP and Digital Fabrication's separate conference committees were merged for this year's conference under the guidance of the steering committee. Other changes are underway and will be announced at this year's meeting in October.

There have also been changes in Board operations. Board meetings have been streamlined, with an increased focus on decision making. Every Board meeting now has Strategic Planning on the agenda. I asked Alan Hodgson, the Executive VP, to take charge of this; in effect he has become VP of Strategic Planning—he becomes President on July 1. The bylaws were amended to allow remote participation, enabled by the DC Nonprofit Corporation Act, which went into effect last year. The first Board meeting with a quorum made up of members both in the room and online via GoToMeeting® was held in Copenhagen in June, immediately after the TC 42 Plenary.

In the growing era of Big Data and to become more data oriented in our approach to the problems and the challenges facing the IS&T, we formed an ad hoc committee on Data Analysis and Marketing in February. While the committee started with a group of appointed members, it doubled in size after an announcement went out to the membership, inviting participation from interested and qualified members—an approach that taps into the skills and enthusiasm of our membership. One of the new members of committee with a statistical background analyzed conference attendance data, which he shared with Conference Planning and Steering Committees. Another is overseeing the engagement with an academic researcher who analyzed survey and conference attendance data. Looking to the future this sort of analysis presents an opportunity to incorporate customer feedback in a new way and as part of the new conference development process.

With all that is going on, there are personal observations on two events at conferences I attended that I want to highlight and share with you. One was the EI panel session on Online Learning. I believe online learning is going to be a game changer; how it will affect the education component of our mission is something still to be addressed. The other was CURATEcamp, a half-day "unconference" at this year's Archiving Conference. It felt like an organized hallway conversation—a stimulating session with like-minded people whom I wouldn't have met were it not for the conference. I expect all our members and conference attendees have their own stories and observations to share based on their experiences at IS&T conferences. To the extent they do, I believe it means we are meeting the needs of our members and the community we serve.

What is satisfying about all this change is that for the most part it is being driven by members and volunteers, with the able assistance of the IS&T Office. We continue to rely on an experienced staff, led by Suzanne Grinnan, our Executive Director, who is also a partner in the strategic initiatives that are underway. Together, we are responding to the changes in the imaging industry and in the community in ways that are already leading to significant changes in the IS&T.

Robert Buckley
President, Society for Imaging Science and Technology
June 30, 2013

IS&T BOARD OF DIRECTORS

July 1, 2012 - June 30, 2013

President: Robert Buckley (Univ. of Rochester/NewMarket Imaging)
Immediate Past President: Rita Hofmann (ILFORD Imaging Switzerland GmbH)
Executive VP: Alan Hodgson (3M UK PLC)
Conference VP: Sabine Süsstrunk (Ecole Polytechnique Fédérale de Lausanne)
Secretary: Ingeborg Tastl (Hewlett-Packard Co.)
Treasurer: Scott Silence (Xerox Corp.)
Publications VP: Geoff Woolfe (Canon Information Systems Research Australia Pty. Ltd.)
Vice Presidents: Reinhard Baumann (Chemnitz University of Technology); Makoto Omodani (Tokai University); Eric Peeters (GoogleX); Alessandro Rizzi (Università Degli Studi di Milano); Steven Simske (Hewlett-Packard Labs); and Marcel Slot (Océ Technologies BV)
Chapter Directors
Europe: Wolfgang Schmidt (Schoeller Technocell GmbH & Co KG) and Dietmar Wueller (Image Engineering GmbH & Co. KG)
Japan: Junichi Hanna (Tokyo Institute of Technology)
Korea: Choon-Woo Kim (Inha University)
Rochester: David Odgers (retired)
IS&T Executive Director: Suzanne E. Grinnan

July 1, 2013 - June 30, 2014

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Treasurer: Scott Silence (Xerox Corp.)
Publications VP: Susan Farnand, Rochester Institute of Technology)
Vice Presidents: Reinhard Baumann (Chemnitz University of Technology); Makoto Omodani (Tokai University); Alessandro Rizzi (Università Degli Studi di Milano); Steven Simske (Hewlett-Packard Labs); Marcel Slot (Océ Technologies BV); Wei Sun (Drexel University)
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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

Publications Annual Report

July 1, 2012 to June 30, 2013

Journal of Imaging Science and Technology (JIST)

by George Chiu, editor

The journal will be losing two long time associate editors in the summer of 2013, Michael Lee and Wei Koh, both of Hewlett-Packard Company. Lee and Koh have served the journal and the community with distinction for many years. We are sad to see them leave, but wish them all the best in their future endeavors. In anticipation to the loss, two new associate editors joined the JIST Editorial Board in the first half of 2013, Nicholas Bonnier (Canon Information Systems Research, Australia) in January and Miguel Angel Lopez (Hewlett-Packard Company, Spain) in June. Bonnier is an expert in the areas of color science and management, image quality, digital photography, and printing system characterization. Lopez has expertise in color science, optics, imaging devices, and digital printing. Currently we are looking to add associate editors in the areas of digital fabrication and image systems and devices.

From 1 July 2012 to 30 June 2013, the Journal received 84 submissions, published 37 articles, rejected 43 manuscripts, and forwarded 5 manuscripts to the *Journal of Electronic Imaging*, on the basis of their subject matters.

The Focused Section on Functional Printing (digital printing technology applied to the creation of functional devices) based on selected papers from Digital Fabrication 2011 along with additional invited papers, guest edited by Jim Stasiak and Jolke Perelaer, was published in the second half of 2012. A selection of articles based on presentations at NIP27 was solicited and published in the Digital Printing Focused Section in November/December 2012. Two Focused Sections on Digital Fabrication and Digital Printing Technology are planned for 2013.

The transition to a new on-line publication vendor and hardcopy printer was completed toward the end of 2012. We are anticipating to catch-up to the normal publication schedule by the end of 2013. Due to a change in vendor, the transition to a web-based manuscript submission and management system has taken longer than expected, however, we are on schedule to start beta testing in August 2013. Our goal is to significantly reduce the manuscript dwelling time and provide better service to the authors and the editorial staff by improving the efficiency and transparency of the manuscript review process as well as facilitate production of accepted articles.

Journal of Electronic Imaging (JEI)

by Gaurav Sharma, editor

JEI received 434 submissions, including 373 contributed papers, 28 special section papers, and 33 letters in 2012, and published 141 papers, including 112 contributed papers, 27 special section papers, and 2 letters in a total of 1,560 pages. This represents a substantial increase in submissions over past years (in 2010 and 2011, JEI had 197 and 278 submissions, respectively) and the trend appears to be continuing. In the first half of 2013, JEI received 271 submissions, including 224 contributed papers, 32 special section

paper continued from page 1

In this session Jeff Read described the development and use of several standards for digital imaging at NARA. He and co-authors Kate Murray and Martin Jacobson described the systematic way in which the requirements for digitization projects are based on the (required) characteristics and intent of the final product.

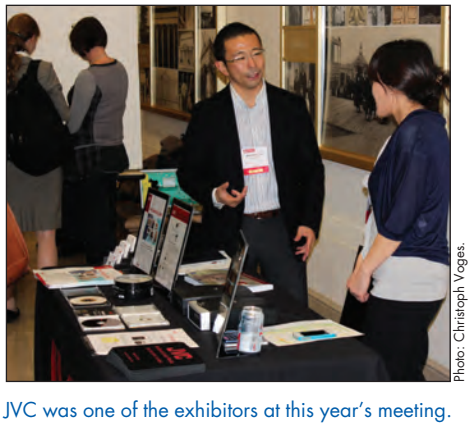

Photo: Christoph Voges.

JVC was one of the exhibitors at this year's meeting.

Following this was the Quality Management session, chaired by Meg Phillips. The quality control workflow for digital documents at the Bibliothèque Nationale de France was described by Ahmed Ben Salah. Gallica, the digital library of the French National Library, holds three million documents. The talk focused on the various steps in the verification and correction of this collection of digitized documents including; advanced optical character recognition (OCR), missing text detection, image-, bibliographic- and epub control.

A second talk, presented by Sven Schlarb from the Austrian National Library, described an infrastructure for quality assurance and preservation of a large digital book collection. This effort is in support of the European-Union-funded SCAPE (SCAlable Preservation Environments) project. This is directed

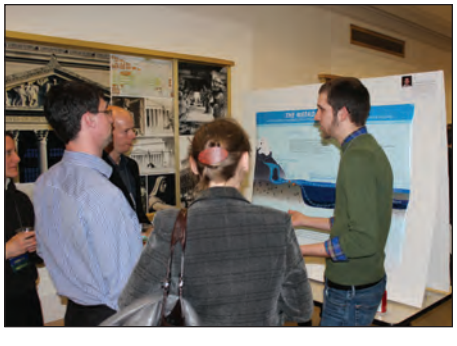

Photo: Diana Gonzalez.

Aaron Collie (Michigan State University) explaining the details of his interactive paper.

papers, and 15 letters. Over the same period, JEI has published 91 papers, including 72 contributed papers, 17 special section papers, and 2 letters, for 978 total pages. In the latest Journal Citation Reports released by Thomson Reuters in June 2013, JEI saw a nice increase in its impact factor. With the growth in number of submissions and published papers, plans are currently in place to go to a bimonthly publication frequency starting January 2014.

The following new associate editors have joined the editorial board: Pong C. Yuen (Hong Kong Baptist University), Clement Fredembach (consultant), Andreas Savakis (Rochester Institute of Technology), and Madhukar Budagavi (Texas Instruments). We have also had several retirements from the JEI Editorial Board: Ling Guan, Robert Haralick, Katsuhiro Kanamori, Jana Dittman, Shoji Tominaga, Sven Dickinson, James Gee, Ying Wu, Jiebo Liu, and Scott Daly. We thank them for their many years of dedicated service.

Special sections and review/tutorial articles augment the regular journal papers, also helping bring in and highlight a variety of new areas. In the first half of 2013, JEI published two special sections: Mobile Computational Photography (Todor Georgiev, Andrew Lumsdaine, and Sergio Goma, guest editors) and Compressive Sensing for Imaging (Fauzia Ahmad, Gonzalo Arce, Ram Narayanan, and Dimitris Pados, guest editors). One more special section is planned for publication in the last half of 2013 on Video Surveillance and Transportation Imaging Applications (Bob Loce and Eli Saber, guest editors). For 2014, two special sections are planned: Stereoscopic Displays and Applications (Nick Holliman and Takashi Kawai, guest editors) and Mobile Computational Photography (Todor Georgiev, Andrew Lumsdaine, and Sergio Goma, guest editors). If you or someone you know is interested in these areas, please ask them to contact the guest editors, me, or the JEI staff. In 2013, JEI has featured four review/tutorial articles so far; these articles are open access and I encourage you to visit the JEI website to see these and other exciting research featured in JEI.

Starting with manuscripts submitted in January 2013, JEI moved to a new author-choice open access model that better meets the requirements of most funding agencies, employers of researchers, and authors. Authors who pay modest page charges of $100 per published page to support publication costs for the journal receive the benefit of immediate open access for their articles. Articles for which page charges are not paid continue to be supported by subscription revenues and are accessible only by subscription.

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 at the journal website: http://jelectronicimaging.org.

Photos: Diana Gonzalez.

The Interactive Paper Session provides a unique opportunity for collegues to meet and discuss papers in-depth.

towards long term digital preservation of large-scale and heterogeneous collections of digital-objects, and based on open-source software.

The last afternoon of the conference included sessions on Digital Forensics and File formats by Phil Michel, and Innovative Software, Projects and Activities, chaired by David Walls.

Speaking of David, he is the Program Chair for Archiving 2014, to be held in Berlin. Christoph Voges, who ably served in the role this year, will be the next General Chair. ▲

SAVE THE DATE:

ARCHVING 2014

May 13-16, 2014

Berlin, Germany

Standards Update by David Q. McDowell, Editor

This issue of *Standards Update* is focused primarily on the recent ICC push to investigate the need for color management support in the medical imaging area.

Background

There is increasing use of color in medical imaging but so far there is no adoption of the technical framework defined by DICOM for color management across the imaging chain from acquisition, pre- and post-processing, to storage, transfer and display. Owing to the increasing use of color images and the need for integrated electronic health records, this issue is of current relevance for device manufacturers, users, and regulators.

In early 2012 the Steering Committee of the International Color Consortium (www.color.org) began to look at the issues of color in medical imaging and proposed setting up a technical workshop to help to address this issue. The goal of this workshop was to bring together key stakeholders to clearly identify areas of need, investigate solutions and propose best-practice approaches. The recommendations of the summit were to be up to the participants and might include the creation of a technical special interest group either as part of the ICC or in some other forum and the establishment of best-practice guidelines for industry.

Summit on Color in Medical Imaging

A Public Workshop—Summit on Color in Medical Imaging, was held on May 8-9, 2013. This was co-sponsored by the Food and Drug Administration (FDA) and the International Color Consortium (ICC). The focus was the Technical Framework for Consistency and Interoperability Approaches for Dealing with Color in Medical Images.

The Workshop was organized into six sessions covering the following topics:
Session 1: WSI/Digital microscopy histopathology
Session 2: Endoscopy/Laparoscopy
Session 3: Dermatology, Opthalmology and Medical Photography
Session 4: Telemedicine/Mobile displays
Session 5: Displays
Session 6: Standards (DICOM, ICC, CIE, AAPM) & Color measurement

A list of the presentations and speakers can be found in the box below.

The summit was attended—in person or via webinar—by approximately 250 people, representing a range of topics and interests. It provided a very successful interchange of ideas and information

Presentations Given at the Summit on Color in Medical Imaging

- *Color aspects and Color Standardization in Digital Microscopy,* Yukako Yagi
- *Colour in Histopathology Imaging,* Darren Treanor
- *Color within the Context of Whole-Slide Imaging,* Stephen Hewitt
- *The Biological Stain Commission,* Brendan Boyce
- *The Overview of Endoscopy and Laparoscopy,* Hideto Yokoi
- *Color Imaging in Endoscopy and Laparoscopy,* Homma Hiroyuki
- *Requirements for Color in Computer Aided Diagnostics Tool for Dermoscopy,* Stein Olav Skrøvseth
- *Patient Photographs in the Electronic Health Record,* Mike Flynn
- *Color Reproduction in Medical Diagnosis,* Masahiro Nishibori
- *Color Error in the Digital Camera Image Capture Process,* John Penczek
- *Image Capture Characteristics of a Fundus Camera,* Christye P. Sisson
- *DICOM WG 22 Dentistry,* Andrew Casertano
- *High-Fidelity Color Reproduction and Multispectral Medical Imaging,* Masahiro Yamaguchi
- *Schopf Importance of Colors in Teledermatology,* Thomas Roger
- *The Role of Color in Telemedicine Applications,* Elizabeth Krupinski
- *Primary Stability: Mechanism, Measurement, Metric, and Remedy,* Wei-Chung Cheng
- *Display Color Measurement,* Andy Masia
- *Color Behavior of Medical Displays,* Tom Kimpe
- *Advancement of LCD Technologies and Consistent Presentation of Image,* Takashi Matsui
- *Color Error in Mobile Displays and Desktop Monitors,* Paul Boynton
- *Chromatic Stimuli and Instrumentation in Experimental Vision Research,* Balazs Vince Nagy
- *The ICC Approach to Colour Management,* Phil Green
- *DICOM & IHE Standards for Medical Color Imaging,* David Clunie
- *Standards and Recommendations for Color Medical Displays,* Aldo Badano

Speaker bios are available at http://www.color.org/events/medical/medical_summit_2013_abstracts.xalter.

An archive of the webcast is available at: http://www.fda.gov/MedicalDevices/NewsEvents/WorkshopsConferences/ucm342138.htm#webcast.

relating to color in medical imaging and resulted in a number of specific follow-up actions.

Summit Outcomes

As part of the discussions a number of candidate work items were identified. These included:

- Calibration slide for histopathology
- DICOM camera raw support and EXIF tags
- Medical RGB Color Space—mRGB
- Framework for multispectral imaging
- Open source reference implementation
- Best practice papers for colour in DICOM
- Connectathon to check colour capability
- Wiki for test images for all modalities

As part of the follow-up to the summit the following steps have been initiated:

- A document titled: "Framework for handling color in medical imaging: A consensus proposal from the Summit on Color in Medical Imaging" is being prepared.
- A task force has been set up to lay out a follow-up plan for work related to color and medical imaging. This group is meeting by teleconference (first meeting had 30 participants).
- The ICC is being asked to setup a Medical Imaging Working Group.
- A project coordinator has been assigned to each of the candidate work items that were identified by the summit discussions.

ICC Medical Imaging Working Group

The charter of the proposed ICC Medical Imaging Working Group is: to enable and promote the correct and effective use of ICC color management for medical imaging. The objectives are:

1. Identify issues with the implementation and use of color management for medical imaging.
2. Establish and maintain liaison relationships with the appropriate medical imaging standards development organizations, e.g. DICOM, AAPM, ACR, IEC and ISO.
3. Prepare white papers and other educational materials, and promotion activities to guide developers and users in the appropriate application of color management to medical imaging.
4. When necessary, propose new ICC specifications or revisions to existing ICC (and other) specifications to address the needs of the medical imaging community.
5. Promote the use of ICC color management in medical imaging

To get involved

This will be an ongoing activity in the ICC and other forums. If you wish to be involved please contact: Debbie Orf at dorf@npes.org. For more technical information contact Craig Revie at Craig.Revie@ffei.co.uk.

Other Standards Activities

Elsewhere in this issue of *The Reporter* you will find an articles about the work of ISO TC 42 (Photography) and IEC TC 119 (Printed Electronics).

ISO TC 130 Graphic technology

TC 130 held a very successful series of Working Group meetings in Shenzhen, China on May 19-24 this year. There were 102 technical experts in attendance who participated in 14 working group or task force meetings. This was probably the largest TC 130 meeting to date.

Some key imaging related items of note include:

WG 2, Prepress data exchange

- ISO 18619, *Image technology colour management — Black point compensation,* has been approved by the ICC and has also been approved as a TC 130 New Work Item. It will be sent to ISOCS for CD ballot before the end of August.
- ISO 12640-5, *Graphic technology — Prepress digital data exchange — Part 5: Scene-referred standard colour image data (RIMM/SCID),* has completed all balloting and is at ISOCS for publication.
- ISO 16684-2, *Graphic technology — Extensible*

continues top of page 14

IEC TC 119 (Printed Electronics)

International Standards are an enabling activity to bring a technology to industrialisation. This is of significant importance for Printed Electronics as we address the "Lab to Fab" bottleneck in this technology. IEC TC 119 has been created to address this very issue and the work is now the point where engagement with and contributions from the IS&T Digital Fabrication community would be extremely useful.

Work has now commenced on a series of International Standards in 2 key areas. Standards on Materials such as substrates and functional fluids should be of particular interest to some parts of our community. There is also a group working on test methods for Printability. Working drafts of proposed standards are now becoming available through the IEC so now is the time for participation.

The next full meeting of IEC TC 119 is likely to be in Cambridge, UK in March 2014. In the meantime I have a paper summarising the technical issues from IEC TC 119 accepted for NIP/Digital Fabrication this year. I look forward to debating these with you in Seattle!

—Alan Hodgson, Chair IEC TC 119

IMAGING STANDARDS NEWS: TC 42

by Ann L. McCarthy, IS&T Standards Coordinator

This Imaging Standards News is focused on both US national and international standards applicable to photographic imaging, including analog, digital and print concerns. IS&T imaging standards encompass the capture, communication, and display of a photographer's desired image content, the advancement and maintenance of analog photographic imaging technologies, and the preservation of physical imaging materials; all practices essential to everyday enjoyment of photography and to our photographic heritage.

IS&T serves as the Secretariat for ISO/TC 42, administering the ISO Technical Committee (TC) for Photography standards and the US TAG (Technical Advisory Group) for TC 42. IS&T has contracted with the American National Standards Institute (ANSI) to conduct the operational Secretariat responsibilities. This Secretariat responsibility also serves the Working Groups (WG) within the international TC 42 organizational structure. The IS&T Standards Management Board, with the IS&T executive director, oversees the standards process and is supported by the IS&T standards coordinator. IS&T is accredited to develop and maintain consensus on IS&T-sponsored American National Standards. For US experts, IS&T administers three Imaging Technology Committees affiliated with the TC 42 project areas of Traditional Photography (IT 2), Image Permanence (IT 9), and Digital Photography (IT 10). Each of these ITs is affiliated with one or more TC 42 working groups.

ISO/TC 42: Current Organizational and Project Structure

IS&T is pleased to share the news that Toru Nagata (Japan) has accepted the position as chair of ISO/TC 42; we express our appreciation for the leadership of outgoing chair, Ken Parulski (USA). We are confident that TC 42 will flourish under Toru Nagata's guidance.

Peter Adelstein (USA), the long-serving convenor of WG 5, has retired from both TC 42 leadership and his career at the Image Permenance Institute at RIT. Adelstein is widely appreciated for his foundational work in image permanence. Jürgen Jung (Belgium) was confirmed as the WG 5 convenor at the 2013 TC 42 Plenary.

Stuart Gordon (USA) has stepped down as WG 3 convenor. The TC 42 standards community sincerely appreciates his service. Yoshihiko Shibahara (Japan) was confirmed as the WG 3 convenor at the 2013 TC 42 Plenary.

TC 42 and its contributing experts are conducting current projects within the following working groups and joint working groups. In each of these areas, 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 Washington, DC, October 2013.
- WG 5, *Physical properties and image permanence of photographic materials;* next meeting in Washington, DC, October 2013.
- WG 18, *Electronic still picture imaging;* next meeting at ANSI HQ, New York City, October 2013.

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 Washington, DC, October 2013.
- JWG 20, *Joint with IEC, Digital Still Cameras*; next meeting at ANSI HQ, New York City, October 2013.
- WG 25, TC 42/WG 18 joint with TC 130, *Use of XMP for digital photography;* next meeting at ANSI HQ, New York City, October 2013.
- JWG 26, Joint with TC 46/SC 11 and TC 171, *Imaging system capability qualification for archival recording and approval;* next meeting at Harvard Library in Boston, November 2013.

ISO/TC 42: 2013 Plenary Meeting

IS&T and ISO/TC 42 express a warm thank you and appreciation to the Danish Standards Foundation (DS) and the National Museum of Denmark for hosting the ISO/TC 42 2013 Plenary and Working Group meetings in Copenhagen and for the excellent meeting facilities. IS&T personally extends appreciation to Jesper Stub Johnsen, Ann Johnsen, Anette Neilsen, with the staff

Photo courtesy of Jesper Stub Johnsen.

Photo: Ann L. McCarthy.

Right: Canal view of the National Museum in Copenhagen, where attendees enjoyed gorgeous weather all week. Above: The Museum hosted the TC 42 Plenary in June. Attendees appreciated the opportunity to visit their extensive collections.

of the National Museum of Denmark, and Erling Trudsø of DS, for the planning and support prior to and during the meetings.

IS&T and ISO/TC 42 are grateful as well to the School of Conservation Library and the National Museum of Photography at the Royal Library for most enjoyably hosting our Secretariat and Host receptions.

Key TC 42 2013 Plenary Resolutions (setting the stage for future work):

- ISO/TC 42 resolves to form a Task Group, "Strategic Business Plan Editing Committee," consisting of the TC 42 Chair, the TC 42 Secretary, the current Heads of Delegations and Working Group Convenors, for the purpose of updating the TC 42 Strategic Business Plan for confirmation at the next TC 42 Plenary Meeting.
- ISO/TC 42 wishes to become involved in ISO/TC 130/JWG 14 (Joint ISO/TC 130 - ISO/IEC JTC 1/SC 28 WG: Print quality measurement methods) and requests the TC 42 Secretary to contact the ISO/TC 130 Secretary to officially establish this collaboration.
- ISO/TC 42 resolves to establish joint work on the image permanence of digital hard copy, including changes in image quality attributes over time, and test methods and specifications for indoor and outdoor applications containing photographic images, and invites ISO/TC 130 to participate.
- ISO/TC 42 requests its Secretary to initiate a New Work Item Proposal ballot on *Photography — Archiving Systems — Vocabulary* when submitted by the project leader, Dietmar Wüller, by June 20, 2013.
- ISO/TC 42 requests its Secretary to submit the title and reserve an ISO number for each of the following planned projects by June 20, 2013:
  - *Photography — Archiving Systems — Best practices for digital image capture of cultural heritage material* (Technical Report)
  - *Photography — Archiving Systems — Image Quality Analysis* (Technical Specification)
- ISO/TC 42 resolves to establish a preliminary work item 18940 *Imaging Materials — Reflection Colour Prints — Specifications for indoor stability.*
- ISO/TC 42 resolves to contact CEN/TC 346 and request participation for the test methods and specification for photographic indoor applications. We are interested in long term preservation of photographs.
- ISO/TC 42 wishes to thank ISO/IEC JTC 1/SC 29/WG 1 for informing TC 42 of their possible project *Quality evaluation method for lightly compressed image and video coding systems (revision 1)* as listed in ISO/IEC JTC 1/SC 29/WG 1 N6336.

A Sampling of Recent ISO Standards Publications

ISO/TC 42 has confirmed, published revised, and published new, thirty-nine standards in the first half of 2013. IS&T is grateful for the ongoing sincere and diligent efforts of the international members of these project teams. Each standards project involves significant work to understand the related technical and industry issues and to demonstrate viable standardization candidates, as prerequisites to developing the necessary standardization consensus. Three recent publications warrant special mention:

- ISO 15739, *Photography — Electronic still-picture imaging – Noise measurements*
- ISO 15781:2013 (Ed. 1), *Photography — Digital cameras – Measuring shooting time lag, shutter release time lag, shooting rate, and start-up time*
- ISO 22028-2:2013 (Ed. 1), *Photography and graphic technology — Extended colour encodings for digital image storage, manipulation and interchange — Part 2: Reference output medium metric RGB colour image encoding (ROMM RGB)*

IS&T-sponsored American National Standards Update

IS&T is pleased to share the following announcement: *On behalf of the ANSI Executive Standards Council (ExSC), IS&T has been informed that the accreditation of the Society for Imaging Science & Technology (IS&T) under its proposed operating procedures for documenting consensus on IS&T-sponsored American National Standards has been approved, effective April 30, 2013.*

The approved operating procedures are available upon request to standards@imaging.org. With this accreditation, IS&T will proceed to update the designations of all of its American National Standards, to "ANSI/IST IT.123-20XX" instead of "ANSI/I3A IT.123-20XX". Review and maintenance of these standards is underway in the corresponding IS&T Imaging Technology (IT) committees. Additional information will be available on imaging.org.

A Sampling of Current Technical Work

Camera Measurement Standards

Camera measurement standards provide methods used to measure the image quality of digital cameras and camera phones. As camera manufacturers continue to advance digital imaging technology, these measurement standards provide well-defined means of comparison and evaluation of these advances. Recent work is focused on a number of image quality attributes that can affect the enjoyment and experience of photographers and viewers, for example: noise measurements, resolution and spatial frequency responses, geometric distortion, flare, texture and low light performance.

Following the June publication of ISO 15739 dealing with camera noise measurements, the next publication in this area is expected to be ISO 12233, which is a significant update dealing

with camera resolution and spatial frequency responses. As the IS&T web pages are enhanced through 2013, imaging.org will include background information on ISO 15739, and a link to the software which can be used to perform the measurements defined in this standard. Similarly, watch for postings of useful software and background materials for ISO 12233, and other standards as they are published.

Digital Imaging Information Standards

The project for ISO/NP 12234-3, *Electronic still picture imaging — Removable memory — Part 3: Use of XMP,* is an example of the ongoing work to develop and augment standardization to communicate digital image details from cameras, to desktop applications, to output and display systems. Several such standards are under development or are recently published in TC 42, including

- ISO/AWI 12234-2, *Electronic still-picture imaging — Removable memory — Part 2: TIFF/EP image data format*
- ISO 15740, *Photography — Electronic still picture imaging — Picture transfer protocol (PTP) for digital still photography devices*
- ISO 22028-2:2013 (Ed. 1), *Photography and graphic technology — Extended colour encodings for digital image storage, manipulation and interchange — Part 2: Reference output medium metric RGB colour image encoding (ROMM RGB)*

Photo: Ann L. McCarthy.

Nicolas Bonnier (Australia) and Maurice Janssen (the Netherlands) browse the historic book collection during the Secretariat Reception at the School of Conservation Library.

Photo courtesy of Jesper Stub Johnsen.

During the Host Reception at the Royal Library, National Museum of Photography, Alan Hodgson (UK) presents the HP Image Permanence Award to Yoshihiko Shibahara (Japan), while Naoya Katoh (Japan) looks on.

Imaging System Capability Assessment for Archival Recording Standards

The working group, JWG 26, was formed by resolution of the ISO/TC 42 Plenary in 2011 to develop standards in support of archival recording and approval projects underway at the museums and cultural heritage institutions around the world. Franziska Frey, head of preservation and digital imaging services at Harvard Library, Harvard University, is the convenor of this joint working group. Recognizing the broad interest in this topic, TC 42 sought the involvement of related ISO committees, with the result that JWG 26 is now working jointly with TC 46/SC 11 and TC 171, and with the CIE. Persons interested in contributing to this work may join through their related national committees. Additional JWG 26 information is posted on imaging.org.

JWG 26 is working to standardize tools and techniques to improve and maintain consistency when digitizing cultural heritage materials. Currently, there are several guidelines in this field, such as Metamorfoze (Dutch National Programme for Preservation of Paper Heritage) and the FADGI (Federal Agencies Digitization Guidelines Initiative — guidelines and best practices for digitization of cultural materials by US federal institutions), as well as various tools which utilize several test targets and software. While these guidelines and tools are helpful, users can be confused about the appropriate techniques and tolerance levels for their particular application. The JWG 26 standardization projects, going forward with strong international collaboration, will ensure the accurate and consistent capture, encoding, and long-term preservation of digital representations of these cultural heritage materials. Users and manufacturers will benefit by international standards in this area.

The initial projects selected for development are:

- *An International Standard Photography — Archiving Systems — Vocabulary*
- *A Technical Report for Photography — Archiving Systems — Image Quality Analysis*
- *A specification for Photography — Archiving Systems — Image Quality Analysis*

Image Stability and Permanence Standards

The publication of ISO 18937, *Imaging materials — Photographic reflection prints – Methods for measuring indoor light stability,* is expected within the next few months. For the many experts contributing to the development of this standard, it is most gratifying to see this project, spanning more than ten years of work, come to fruition.

ISO 18937 is one of the test method standards developed in TC 42/WG 5 to standardize the test materials, process controls, test environment regulation, measurement techniques, and reporting rules used in testing to evaluate the print image stability of physical print imaging materials. Such tests are used to assess the image stability of materials under various conditions, e.g.,

commercial display, archival storage, consumer home use, and museum display. These test methods measure a material's image stability under accelerated exposure conditions designed to exacerbate the imaging material's destabilization, while maintaining a relationship to the destabilization which in real usage conditions occurs over extended periods of time. One of the challenges in these test methods is that precise test process controls are required, which can push the limits of available test equipment instrumentation.

While the test method standards can be used independently to measure specific imaging material changes under specific conditions, they are also intended to be used in conjunction with applicable International Standards for specification of print life, specified for each intended use. The Photo Book Specification Standard project will provide one such specification. As photography has evolved over recent decades from silver halide based systems to systems utilizing digital capture with a variety of display modes, family memories are no longer typically stored in homemade photo albums. Today, the digital Photo Book, manufactured in small quantities from a collection of a consumer's digital images, serves this important role in preserving family memories. As with the test method standards, challenges abound in creating specification standards covering the diverse range of materials and use cases offered through digital fulfillment systems. ▲

Related Links: Cultural Heritage

IS&T Archiving Conference
www.imaging.org/ist/conferences/archiving/index.cfm

Restoration of a masterpiece
www.vangoghmuseum.nl/blog/slaapkamergeheimen/2010/09/the-intangibility-of-colour/?lang=en

US National Archives resources and research:
www.archives.gov/preservation/

RIT Image Permanence Institute hardcopy preservation resources
www.imagepermanenceinstitute.org/

A glimpse into the transitions underway in the Harvard University library collections:
http://library.harvard.edu/programs-initiatives

paper continued from page 11 *metadata platform (XMP) — Part 2: Validation using RELAX NG,* has been approved as a CD and the DIS is in preparation for ballot.

- ISO 17972-1, *Graphic technology — Colour data exchange format (CxFx) Part 1: Relationship to CxF,* has been approved as a CD and the DIS is in preparation.
- ISO 16760, *Graphic technology — Prepress data exchange — Preparation and visualization of RGB images to be used in RGB-based graphics arts workflows,* was approved as a CD and the DIS ballot is in preparation.

WG 3 Process control and related metrology

Two WG 3 documents that potentially have broad imaging impact are ISO 12646, *Graphic technology — Displays for colour proofing — Characteristics and viewing Conditions,* and ISO 14861, *Graphic technology — Colour Proofing using electronic displays.* Although ISO 12646 is a published document, when work was started on ISO 14681 it was decided to revise both documents to be sure that they were properly coordinated and did not overlap. The goal is that all display hardware performance requirements will be in ISO 12646. Requirements specific to soft proofing will be in ISO 14681 which will build on and reference ISO 12646

Currently both new documents have been approved as NWI and ISO 12646 has been approved at the CD level. A second CD is being prepared for ISO 14681. When that CD is approved both documents will be placed in DIS ballot.

WG 3 is continuing to work on printing definition standards, both the traditional approach in ISO 12647 and the characterization data approach in ISO 15339.

WG 10 Management of security printing processes

WG 10 has completed its primary task with the publication of ISO 14298:2013, *Graphic technology — Management of security printing processes.*

WG 11 Environmental impact of printed products

WG 11 has also completed its primary task with the publication of ISO 16759: 2013, *Graphic technology — Quantification and communication for calculating the carbon footprint of print media products.*

Published standards are available both from ISO (www.iso.org) and for those in the US from NPES (www.npes.org/programs/standardsworkroom/purchasestandards.aspx).

For suggestions for (or input to) future updates, or standards questions in general, please contact the editor at dmcdowell@npes.org.

IS&T Honors and Awards celebrate the achievements and service of members of the imaging community. *We encourage you to nominate colleagues for these prestigeous tributes. To do so, visit www.imaging.org/ist/membership/honors.cfm*

International Symposium on

Technologies for Digital Photo Fulfillment

January 5-6, 2014
Las Vegas, Nevada

In conjunction with
the CES, Consumer Electronics Show, and
the DIMA/PMA, Photo Marketing Assoc. Show

PMA@CES International

Abstract Submission Deadline:
October 1, 2013

(with preference given to those received by Sept. 1)

www.imaging.org/ist/Conferences/tdpf/index.cfm

UPCOMING IS&T EVENTS

September 29 – October 3, 2013; Seattle, Washington
NIP29/Digital Fabrication 2013
General Chairs: Steve Simske and Werner Zapka

November 4 – 8, 2013; Albuquerque, New Mexico
21st Color and Imaging Conference (CIC21)
General Chair: Clément Fredembach

January 5 – 6, 2014; Las Vegas, Nevada
Technologies in Digital Photo Fulfilment 2014
General Chair: Joe LaBarca

February 2 – 6, 2014; San Francisco, California
Electronic Imaging 2014
Symposium Chairs: Sergio Goma and Sheila Hemami

May 13 – 16, 2014; Berlin, Germany
Archiving 2014
General Chair: Christoph Voges

For a list of IS&T and other imaging-related meetings, visit www.imaging.org

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