The 2001 TAGA Annual Technical Conference will be held May 6–9, 2001, at the U.S. Grant Hotel in San Diego, California. The conference will be run in parallel with the TAPPI Coating & Graphic Arts Conference & Trade Fair to be held at the nearby Hyatt Regency San Diego. TAGA’s Local Conference Committee Chair is new TAGA Board Member Roger Siminoff of Apple Computer.

The Challenges of Change
It’s not just content that is being changed by advances in computer technologies, the entire printing process, and even the very definition of what is ink-on-paper is changing. Behind the marketing hype and the futurist are the hard-working plant, prepress, equipment, and materials engineers who make the future happen every day. This conference is for them.

PLANT NETWORK ENGINEERING
More and more plant components are computer-enabled “smart” components, and the challenge is to establish a plant bus that can communicate with all plant equipment. Issues include proprietary equipment, integrating with legacy equipment, optical-to-coaxial bridging, and more.

ADVANCES IN SMART COMPONENTS
From pallets to rollers to blankets to paper rolls: what is being automated and why? What are the plant integration and data management side-effects of smart technologies? What benchmark tests have been conducted and what did we learn?

DIGITAL PROCESS CONTROL
Process control includes in-line measurement and sensitometry, as well as establishing plant-wide methods for applying age-old SPC methods to the digital environment. Modern production requires modern methods; what advances are being made today?

HYBRID SYSTEMS
Flexibility has always been the printer’s trademark, but flexibility demands are growing and manufacturers are responding. This session will cover the marriage of lithography and digital printing technologies.

E-PRINTING
Inks that are printed traditionally but are Modulated electronically? E-books, e-inks. And even e-papers may be in your future... short-term future! This session will feature the pioneers of future print.

XML & PRINTING
XML is helping to make the Internet more of a business community than a consumer community. XML can be used to help distribute printing or can be rendered upon receipt to print as well. Traditional printing or digital print, both are affected by the advances we’ll hear about during this session.

DIGITAL PRINTING & NON-IMPACT IMAGING
Digital printing and non-impact printing continues to evolve and is becoming part of most, if not all workflows. Featured will be advances in imaging technologies, color management for digital techniques, and more.

Continued on Page 2
E-Commerce Companies Eye Printing Industry as Premier B2B Market Opportunity

COLORADO SPRINGS, CO.—April 3, 2000. Despite mixed industry reactions thus far from printers to the uncertain prospects of e-commerce (some love it, some say maybe, and some say never) for the printing and graphic arts industry, e-commerce offers some significant opportunities for profit improvement.

That was the report from James Harvey, VP of the Graphic Communications Association and a new board member for the Technical Association of the Graphic Arts (TAGA) at its 52nd annual technical conference which opened here today. The new dot.com startups are not assaulting the industry, he said. But, so strong are potential industry cost savings, tight-fisted outside venture capitalists have poured as much as $2.7 billion into funding a host of new companies active in the print and graphic arts markets.

Savings can be huge. For instance, if printing sales staffers are spending 40% of their time chasing copy, proofs, or other details for the print jobs they sell, streamlining this process of communication with clients via the Internet represents one important opportunity for savings, he said. Multiply the average $67,000 full cost per year of a typical PIA member sales person, and reducing this high cost messenger service expense by expensive sales people really adds up. PIA industry statistics show selling and administrative cost for a typical printer averages over 18% of sales.

If e-commerce could save 6% of this cost, printers, buyers, and the dot.com companies can all share in the enhanced profits, perhaps by as much as 2% each. Given estimated industry sales of $275 billion for commercial print [in ‘98] a 6% saving could yield as much as $16 billion. No wonder the financial community is interested in print, Harvey observed. Moreover, the printing industry—which remains squarely in competition with radio, TV, and other easily bought broadcast media—needs to help print buyers simplify the task of acquiring printed work. E-commerce can streamline print buying procedures.

At the opening TAGA session, representatives from four of the nearly 40 dot.com firms already active in printing industry e-commerce formed a Q&A panel. Collabria technology VP Robert Hu said printers need to dot.com firms already active in printing industry e-commerce formed a Q&A panel. Collabria technology VP Robert Hu said printers need to

TAGA 2001

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Special One-Day Bridge Program Planned with TAPPI

A highlight of the TAGA 2001 Annual Technical Conference will be a one-day Bridge Program on Wednesday, May 9, with TAPPI, The Technical Association of the Pulp and Paper Industry, who will be holding their large coatings conference in parallel with TAGA 2001.

The bridge day will feature a single or multi-track program, the focus of which is Present and Future Imaging Technologies and their Impact on Paper.

Proposed topics for this special one-day program are Ink Jet Technologies, Electrographic Technologies, Hybrid Technologies, Waterless Printing, Just Plain Different Technologies, E-Paper, Ink Setting, Mottle, Drupa Update, Advances in Short Run Printing Techniques, and Blister.

TAGA Vice President of Technical Papers, Bill Ray (Group InfoTech), and the TAGA Technical Papers Committee, are currently soliciting papers on a full range of topics, not necessarily limited to those mentioned. If you wish to present a technical paper at TAGA 2001, please forward your abstract (~100 words) to Ms. Kara Knopf, Technical Program Coordinator, at TAGA, 68 Lomb Memorial Dr., Rochester, NY 14623-5604; Tel. (716) 475-7470, Fax (716) 475-2250; E-mail: TAGAOfc@aol.com, by September 15, 2000.
Our recently concluded Annual Technical Conference in Colorado Springs showed the “DRUPA effect” we have observed over the years, especially as travel budgets are under continuing pressure. Attendance was off somewhat, but was still good considering that many who were forced to choose between TAGA and DRUPA will be going to DRUPA. I thought that the number and quality of papers was up to the usual standard.

Speaking of DRUPA, TAGA will be putting on a mini-conference with Verein Deutscher Druckingenieure (VDD) as we have in the past. It will commence at 3pm on Friday the 26th of May at the Congress Centrum, Dusseldorf Sud, on the exhibition grounds.

You should have received word about another TAGA collaboration. Incoming Vice President of Membership and Publicity, Jim Harvey, proposed that TAGA organize a one-day conference on XML (“eXtensible Markup Language”) and Digital Printing to be embedded in GCA’s XML – Europe 2000 conference in Paris, France. The dates are June 12-16 and TAGA’s day will be the 14th. Particular recognition and thanks are due Simo Karttunen, Nils Enlund, Bill Ray, Karen Lawrence and Kara Knopf, as well as, of course, Jim Harvey for contributing on TAGA’s behalf. I speak for the Board in conveying my excitement about our collaboration with GCA which provides a new revenue opportunity for TAGA.

In August, TAGA will contribute a session to the R&E Council’s DNPS (Digital Networked Production Systems) Conference. Details are still being ironed out. We are negotiating earnestly with IS&T (The Society for Imaging Science and Technology) regarding a co-location of our ATC alongside their PICS conference; we are looking at ’02, ’03 or ’04 as possible years.

Through the initiative of Bruce Blom, TAGA will be joined by TAPPI (The Technical Association of Pulp and Paper Industries) in San Diego next Spring. We will run our ATC in parallel with TAPPI’s large coatings conference. In other words, each organization will host its own conference at nearby hotels, except for a “bridge day” on Wednesday, the last day of both conferences. Look for additional details in this newsletter.

In the Fall of 2001, TAGA will be going to Stockholm for a two-day, single track conference. Anders Bovin (with help from S. Nordqvist, H. Kipphan, S. Karttunen, and P. Mångin) has already begun working closely with Bill Ray on planning the conference. They expect it to be a different kind of TAGA conference and will focus on a subset of the topics usually addressed at our ATC. Details will be forthcoming in the Call for Papers.

TAGA’s Board had a customary meeting on the days preceding the ATC. What wasn’t customary was the length and fervor of the deliberations. A quick review of the preceding schedule of conference participations and collaborations reveals a great deal of ferment at TAGA. We all feel this is good and the Board debated at length a variety of organizational changes that will enable TAGA to manage and enhance its growth. I will write about these plans and developments in coming messages, once the various new committees have begun reporting back their results.

Lastly, I wish to thank departing Officer K. Leela Moore and Board member Shem-Mong Chou for their service to TAGA. We all welcome Bill Ray and Miles Southworth to renewed terms as VP of Papers and Secretary-Treasurer, respectively. Jim Harvey will be VP of Membership and Publicity. Re-elected to the Board were John Werner and Richard Goodman. Beginning first three-year terms on the Board will be Tony Stanton and Roger Siminoff. Congratulations to all! Roger Siminoff has already agreed to be the local conference chair for our meeting in San Diego.

—Thanks from all of us.

TAGA 2000
ELECTION RESULTS

FOR VICE PRESIDENT TECHNICAL PAPERS (2-Year Term)
Bill Ray, Group Infotech

FOR VICE PRESIDENT MEMBERSHIP/PUBLICITY (2-Year Term)
Jim Harvey, Graphic Communications Association (GCA)

FOR SECRETARY TREASURER (2-Year Term)
Miles Southworth, Graphic Arts Publishing

FOR 4 DIRECTORS’ POSITIONS (3-Year Term)
Richard Goodman, Kodak Polychrome Graphics
Roger Siminoff, Apple Computer
John Werner, Graphics Communications World
Tony Stanton, Carnegie Mellon University

APPOINTED TO FILL VACANT DIRECTORS’ POSITIONS
Stig Nordqvist, Goteborgs-Posten (Sweden) (2-Year Term)
Anders Bovin, Animus (Sweden) (1-Year Term)
Although attendance lagged slightly due in part to a “DRUPA” year, many enthusiastic TAGA members and non-members alike turned out for TAGA 2000 in Colorado Springs making the conference once again a big success!

Many thanks to the TAGA 2000 Local Committee: Richard Goodman and Eugene Sheriff of Kodak Polychrome Graphics
On Tuesday, April 2, 2000, at the TAGA Honors Awards Banquet at the Wyndham Hotel in Colorado Springs, Colorado, in conjunction with the 2000 TAGA Annual Technical Conference, the TAGA Honors Award for 2000 was presented to Dr. Mitsuo Kaji by Richard Fisch, TAGA Past President, and posthumously to Dr. William Banks.

Mitsuo Kaji is a professor at the Tokyo Institute of Polytechnics and past General Manager of the Research and Development Center of the Asahi Shimbun, Chief Engineer at NEC Engineering Co., chair of the Image Processing Technology Standards Committee (IPTS) and vice chair of the TC130 Domestic Committee in Japan. Born in Japan in 1929, he graduated from the Tokyo Institute of Technology with a Bachelor degree in Electrical Communication Engineering in 1952. He received his doctoral degree in Engineering from the same institute (in November 1996).

Upon graduation he joined the Asahi Shimbun, a leading newspaper in Japan, where he held the post of Communication Engineer in the telephoto section. In 1955, he completed his first successful work which was the radio photo transmission from the Antarctic area by using the Direct FM method. In the 1960s, his work at the Asahi Shimbun focused mainly on the development of newspaper publishing systems by facsimile transmission.

From 1968 to 1979, he was Senior Engineer of the Research and Development Center of the Asahi Shimbun where he was responsible for developing the input/output equipment for a new electronic publishing system. In February 1980, he was appointed to the position of General Manager of the Research and Development Center where he helped create the first electronic newspaper publication system. In 1985, he succeeded in printing the International Edition of the newspaper in London using satellite transmission.

In 1986, he joined the NEC Engineering Co. where he worked for eight years as a Chief Engineer and Consultant. In 1988, with the cooperation of Dr. Eiichi Inoue, 1995 TAGA Honors recipient, and Dr. Masayuki Nakajima, who were principals of related academic societies, he founded the Image Processing Technology Standard Committee (IPTS). The functions of IPTS were to study and standardize the digital data exchange specifications for graphic arts and to create the Standard Color Image Data (SCID) as a graphic system evaluation tool.

In 1994, he became a professor at the Tokyo Institute of Polytechnics where he teaches graphic technology including halftoning, color reproduction, image capturing and recording. In addition to carrying out work on standardization, other duties and teaching at the Tokyo Institute of Polytechnics, he prepared his doctorate thesis, three TAGA papers and three IS&T.

Besides his occupational duties, Dr. Kaji devoted much time to other educational and printing industry activities. From 1979–1995 he was a visiting lecturer on Electronic Imaging to students in the Department of Graphic Technology at Chiba University. From 1980–1986 he was chairman of the Production Committee of the Board of the Nihon Shinbunkyo-kai (Japanese Newspaper Association). From 1986–1988 he served as vice-president of the Institute of Image Electronics Engineers in Japan (IIIEJ).

In 1989 he participated in the ISO/TC130 (graphic technology) meeting held in Berlin and he became involved with reactivating the dominant international technical committee for graphic technology standards, ISO TC130, in Japan. From 1989–1998 he served as Vice-Chair and Chair of the Image Processing Technology Standards Committee (IPTS), and Vice-Chair of TC130 Domestic Committee.

In 1996 Dr. Kaji was honored by the Minister of International Trade and Industry for his contributions to standardization, and now TAGA honors him for these and his contributions to the advancement of newspaper printing technologies.

Following the presentation to Dr. Kaji, Tony Johnson paid tribute to Dr. William Banks who posthumously received the TAGA Honors Award for 2000.

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SPECIAL STUDENT BRUNCH PROGRAM
On Sunday, April 2, after the traditional Student Brunch, a program especially designed for students was offered. The idea was to give a “bonus track” to these students in order to acknowledge their dedication and contribution to TAGA. About 50 students plus several former chapter members and teachers attended. The program was divided into two parts: one including two presentations and the other being a panel discussion.

The first part started with a 3-D presentation, “Proofing vs. the dot”, prepared by Stanley Rosen and presented by Leigh Kimmelmann, both from Scitex. Thanks to the polarizing glasses that were given to the attendants, the presentation was quite spectacular. It also raised interesting issues that were to be discussed later on.

The second presentation dealt with a joint research project, initiated a long time ago by Harvey Levenson from Cal Poly and Bob Chung from RIT, and joined recently by Jan-Erik Nordström from STFI and myself. The results were presented by the four of us in a talk named “Increasing color gamut by means of reengineering the fountain solution”. Lacking space to give more details, I will simply add that these presentation required a different mindset from both their authors and the audience.

The panel discussion gathered the four authors of the second talk and Sam Ingram from Clemson. Harvey Levenson moderated the discussion and invited students to raise issues of interest to them. The debate was rich and time passed quickly.

This first experience was convincing and we think it should be renewed and improved. This would require contributions from students and/or other TAGA members. Maybe students could propose or design the program they would like to attend. It could be thematic, hold both presentations and discussions, etc. Any suggestion, proposal or contribution is most welcome.

Finally, on behalf of TAGA, I would like to thank all contributors and participants for making this event quite enjoyable. Hoping this will initiate a regular annual event.

Submitted by Bernard Pineaux, EFPG

STUDENT CHAPTERS ANNUAL MEETING AND RECEPTION
On Monday, April 3, the Students participated in their Annual Student Chapters meeting following a great western BBQ dinner sponsored by Heidelberg. During the meeting, the students discussed their past, present, and future chapter activities, ideas for fundraising, and member recruitment, and other timely issues. The meeting was very productive and a good time was had by all.
STUDENT AWARDS

On Tuesday, April 4, many students received awards for their technical accomplishments. This year’s winners are:

Dusty Rhodes/TAGA Graduate Student Paper Competition Award
Ludovic Fouché, E.F.P.G, Grenoble, France

TAGA Student Poster Paper Competition Award
Cheryl Bloch, Cal Poly State University

Harvey R. Levenson/TAGA Undergraduate Student Paper Competition Award
1st place
Alex Castellanos, Cal Poly State University and Paul Haak, Cal Poly State University
2nd place
Veronika Pekarovicova, Western Michigan University
3rd place
John Muehlbauer, Western Michigan University

TAGA Student Chapter Publication Contest Award
1st Place
Clemson University
2nd Place
E.F.P.G., Grenoble, France
3rd Place
Cal Poly State University

Dr. Banks obtained an honours degree in chemistry from London University followed by a doctorate in philosophy for physical chemistry research. In the mid 1930s, he joined the Printing and Allied Trades Research Association, where his early work involved the drying of printing inks and surface chemistry problems in offset lithography.

During the war years he was involved in the Tube Alloys Project, the code name for the British contribution to the atomic bomb project, where he coordinated work on the development of methods for the separation of uranium isotopes.

In 1947, he was appointed research superintendent at PATRA (now Pira), a post he held until retirement in 1970 when he became a consultant. In 1950, he was invited to join the United Kingdom Scientific Mission to the USA on a three-month study tour which allowed him to gauge the current progress made by US research and development in the printing industry.

He was deeply committed to education and training and gave many years of service in this endeavor. He served on the Council and Education Committee of the Institute of Printing, on the Science and Research Consultative Committee at the London College of Printing, as associate lecturer at the LCP, and as an honorary lecturer at the University of Manchester Institute of Science and Technology.

Dr. Banks was an early Fellow of the Institute of Printing and the second recipient of its Gold Medal. He was honored in 1992 by GATF receiving their Gold Medal award. He was nominated last year to receive the 2000 TAGA Honors Award and had been invited to TAGA 2000 for the presentation, but unfortunately Dr. Banks passed away this past winter. TAGA honors Dr. William Banks for his outstanding contributions to the printing industry during his long and distinguished career.
COLOR CONCEPTS with Gary Field

COLOR HALFTONING

WHY HALFTONE?
The color halftoning process forces us to make all kinds of printed image quality tradeoffs, and burdens us with complex equipment and production headaches. Do we really have to use it?

Leaving aside the gravure process for a moment, the reason why we use halftone screens may be simply stated: it is impossible to independently vary the thickness of ink printed within an image; therefore, in order to create the appearance of tonal differences, it is necessary to vary the inked area. Halftone screens (physical or electronic) are used to fragment the original continuous tone image into halftone (i.e., black or white) elements that are proportional in size to the darkness of corresponding tonal values in the original. In other words, the combination of a fixed ink film thickness and variable area coverage will create (at the proper viewing distance) the illusion of variable tonal values.

The gravure process generally uses variable depth cells within the cylinder that carries the image. The resulting printed image is consequently formed by pigment deposits of varying thickness. The most common form of today’s gravure cylinder engraving process also produces cells of varying area; therefore, the perceived tonal values are due to a combination of variable area and variable thickness.

HALFTONE STRUCTURES
Halftone values may be represented by regular (“conventional”) or random (“stochastic”) structures. Conventional halftone structure can take many forms through variations in dot shape, screen ruling frequency, and screen angle.

Halftone structure selection is based upon the printing process, substrate, inks, number of colors, the nature of the original, and the purpose of the printed product. In practice, there is no single perfect combination of halftone structure elements to suit all situations. In fact, halftone element choices are often traded off against each other to maximize the important image qualities for a given situation.

RESOLUTION AND SCREEN RULING
The success of the halftone process in creating the illusion of variable tone areas depends largely upon whether the eye can detect the halftone structure at normal viewing distances. Normal viewing distance varies from as much as 100 feet or more for a billboard poster, to as little as 18 inches for most reading matter.

Fine screen rulings (up to about 250 lines per inch) are desirable for such “facsimile” images as fine art photographs or paintings that may be closely studied by students. Coarse screen rulings (less than about 50 lines per inch) are quite satisfactory for billboard posters and are, in fact, more desirable than finer screens for this application because press dot gain variability is less for coarser screen rulings.

The image detail requirements of the original also guide the screen ruling selection process. Important fine detail demands a screen ruling sufficiently fine to resolve that detail at normal viewing distance. The importance of detail will vary according to the context of the image: hair detail may be very important in a hair shampoo magazine advertisement or carton illustration, but less so in a general portrait.

Production conditions will also influence the screen ruling selection process. Offset lithography is capable of the highest resolution (finest screen ruling) followed by gravure, flexography/letterpress, and screen printing. Smoother substrates can handle finer screen rulings than rougher ones, and high viscosity and tack sheetfed inks can successfully print finer screen rulings than the low viscosity and tack inks used for high speed web printing.

COLOR FUSION
At this point, it is appropriate to discuss the process by which we are capable of perceiving about a million different colors from the eight discrete colors that form the structure of printed images. The eight colors are: the cyan, magenta and yellow primaries; the blue, green and red overprints, formed by pairs of primaries; the unprinted white substrate, and the black overprint formed when all primaries (and, in some cases, the black ink) overprint each other.

The process by which the eight discrete color halftone image elements combine to produce the illusion of a continuous color is best described by the term color fusion. Successful color fusion (i.e., no individual structural elements are apparent) occurs when a combination of the eye’s visual acuity (moderated by viewing distance and the intensity of the illumination source) and the size of the eight structural color elements are such that a single continuous color is perceived. Color fusion applies not only to the subtractive photomechanical process of color reproduction. The red, green and blue image elements that form the additive color process television screen or computer monitor are also fused by the eye to produce a continuous color. In fact, the fusion process is completely independent of the colors that are being used: some subtractive color reproductions use more colors (e.g., green and orange for some high fidelity color printing processes) than the standard primaries, and computer monitor displays can be made with cyan, magenta and yellow image elements.

The eye cannot tell, under appropriate viewing conditions, whether a particular color perception results from the fusion of color monitor elements, halftone color elements or blended pigment particles. Color fusion is the great leveler, so it is pointless to create artificial distinctions on the basis of what color elements are used or how these elements are structured on the screen or page. It is all light.

GRAININESS
Halftoning strategy must be chosen with graininess considerations in mind. Image graininess may be caused by a grainy original, inappropriate prepress image processing (too much sharpness enhancement) or deleterious press conditions (ink film thickness too high).

Finer conventional screen rulings will reproduce the original image grain (which, after all, is a form of detail) more faithfully. Image graininess is smoothed out by coarser conventional screens at the price of reduced resolution.

Some random dot or stochastic screens can introduce a grain-line structure to what should be smooth tonal expanses within an image. This drawback is usually more than outweighed by the generally superior resolution and lack of moiré patterns achieved when using stochastic screens.

The resolution-graininess tradeoffs may be rendered less traumatic by the judicious selection of dot shape, dot placement and, under some circumstances, screen angle. The key objective here is to use a screen ruling that is coarse enough to minimize graininess in smooth tonal areas but fine enough to maximize resolution in those areas containing important “busy” detail.
DOT SHAPE
Elliptical dot screens are often recommended for minimizing original image graininess, and for reproducing smoother vignettes ("ramps"). Elliptical dot screens succeed at these tasks at the expense of reduced resolution (relative to square dot screens) in fine detail areas. There is also some increased risk of press-induced moiré when elliptical dot screens are used instead of round-square configurations.

The introduction of computer-driven laser halftoning processes during the early 1970s made it possible to generate a wide range of dot shapes and even (in the case of the PDI CompuDOT system) position the dot to minimize the breakup of fine image detail.

Stochastic screening is perhaps the most radical innovation that was made possible by the computer-laser screening combination. Tonal elements are represented by many tiny fragments which, when visually combined by the color fusion process, equal the tonal value of a corresponding conventional square, round or elliptical dot. The near-random nature of the stochastic screen made it possible to print with six, seven or even more colors without fear of the moiré patterns that had previously constrained most process color reproduction.

SCREEN ANGLES AND RESOLUTION
Conventional halftone screening breaks up image detail regardless of the chosen screen angle. Detail loss is, however, exacerbated when the image is screened on more than one angle, as is the case for four color printing. The relentless march of halftone dots from four different directions knocks out all kinds of fine detail. Such detail loss is minimized when very fine or stochastic screens are used, but only at the expense of the other image quality factors that were discussed earlier.

If all four process colors are printed on the same angle, the resolution loss due to multi-directional screening can be avoided. Production trials suggested that same-angle 133 line screen reproductions were equal in resolution to four-angle 150 line screen reproductions. Here, in theory, is a way to gain the image-smoothing effects of a coarser screen without the loss of resolution that such usage implies.

The practical drawback with same-angle printing is that slight register variations will cause color variability because of additivity failure factors. Moiré is not an issue unless one color image is badly skewed relative to another.

TRANSCENDING THE CONSTRAINTS
Computer-driven laser halftoning processes may allow us to transcend the constraints that require us to make tradeoffs during the halftoning process. Electronic halftoning systems, however, raise other issues that will be covered in the next column as part of this two-part exploration of color halftoning strategy.

FOR FURTHER INFORMATION
Paris, France
Join us for the following special one-day TAGA program, which will be held on Wednesday, June 14, 2000, at the Palais de Congres in Paris, France, in conjunction with GCAs (Graphical Communication Association) XML Europe 2000 Conference:

Morning:
Chair: Nils Enlund, Professor, The Royal Institute of Technology, Sweden
XML is a family of metadata and web standards that will play a major role in web, cross-media and print publishing. This session and its conclusion in the afternoon will cover various aspects of content management, media production, output and delivery in web media, and digital printing systems.

Widely Distributed Digital Printing
Kenneth M Brooks, Jr, Vice President, Digital Content, Barnes & Noble, Inc, USA
With the advent of on-demand printing and fulfillment of books centrally and at point-of-purchase, digital printing is poised to take the book publishing and retailing industries by storm. This presentation will address some of the challenges we’re facing in the management of a large-scale distributed printing application across a wide variety of print engines.

XML-Based Ifratrack—The Glue for Integration in Business-Wide Media Workflow Management Systems
Stig Nordqvist, PhD, CIO, Göteborgs-Posten Group, Sweden; Additional authors: Johan Stenberg, PhD, Managing Director, MWM AB, Sweden; Fredrik Fällström, PhD, Development Manager, MWM AB, Sweden
Content management and production processes in the media industry are becoming more complex. This puts new demands on management and creates new possibilities of intersystem integration. The new XML-based Ifratrack recommendation is a tracking information interchange mechanism for integrating production management systems in the media industry.

Electronic Book Conversion and Manufacturing Using Embedded Tagging Tools
William J Ray, PhD, President, Group InfoTech, Inc, USA
Large scale OCR conversion of out-of-print books has become both economically viable and desirable with the advent of Internet distribution and the general availability of both print-on-demand (POD) systems and the E-book. This paper describes a new manufacturing and embedded tagging process associated with the conversion of data from physical pages to tagged electronic files. The paper, specifically, describes a set of new tagging tools that allow the user to provide for significantly reduced cost for tag creation.

Modules for an XML Schema in the Book-On-Demand Process
A.C. Hübler, Director of Institute, Chemnitz Technical University & K. Kreülich, Academic, Chemnitz Technical University, Institute for Print- and Media Technology, Germany
XML provides new opportunities for Book-on-Demand applications, in particular it directly supports subtler content management methods for individual user requirements. The presentation illustrates how to use and implement these capabilities.

Afternoon:
Chair: Simo Karttunen, Professor DTech, Helsinki University of Technology, Finland
XML is a family of metadata and web standards that will play a major role in web, cross-media and print publishing. This session and its predecessor in the morning will cover various aspects of content management, media production, output and delivery in web media and digital printing systems.

PPML (Personalized Printing Markup Language)—A New Industry Standard Print Language
Dave deBronkart, Senior Consultant, Print On Demand Initiative (PODI), USA; Peter Davis, Principal Consulting Software Engineer, Pageflex, Inc, USA
Personalized printing (also known as variable data printing, variable info printing, etc.) is the highest-value application for high quality full color digital printing: it allows creation of brochures, mail shots, menus etc. that are attention-getting because they are truly personalized, with variable content selected for the interests of the individual. But until now personalization has only been possible through proprietary, closed systems, which has restricted buyers’ choice of software and machinery. This session presents PPML, a brand-new XML-based industry standard printer language defined by PODI, an industry-wide consortium of 13 companies for variable data printing.

Book Ticket Files and Imposition Templates for Variable Data Printing: Fundamentals for PPML
Barco’s has a reputation of building innovative solutions and products for Personalized and Digital Printing. Long before the PPML standard (Personalized Printing Markup Language) was built, Barco understood the appropriateness for using XML in describing personalized documents and how pages are to be “imposed” on digital presses. This presentation amplifies on the “Book Ticket Files” and “Imposition Templates”, and their concepts that contributed to the PPML standard.

Selecting and Utilizing Metadata of News Articles
Asta Bäck, Senior Research Scientist, VTT Information Technology, Finland
During the publishing process metadata are needed for different purposes. This paper lists these and analyses various metadata dictionaries with regard to the metadata aspects they cover. This paper reports a case implementation where metadata are used to support electronic publishing services for end-users and editors. Some of the metadata are created explicitly and some are collected semiautomatically or automatically. It concludes with experiences gained from using this metadata and processing the actual XML-articles for rendering.

Finishing Technologies in Digital Printing: Making Digitally Printed Documents Professional
Anastasios Politis, Research Scientist, Royal Institute of Technology, Stockholm, Sweden, Greece
The increased use of digital printing systems has necessitated the development of new finishing and binding systems for the documents that are digitally printed. A quite important issue on finishing technologies for digital printing systems is the requirement for digitally printed documents to be as good, look as “professional” and function as the traditionally finished ones. This presentation reviews this and other issues for digital printing systems.

For registration, hotel, and airline information, please visit XML Europe 2000 at http://www.gca.org on the Internet or call TAGA at (716) 475-7470.
The R&E Council’s Digital Networked Production Systems (DNPS) Smart Factory Conference, co-sponsored with the Graphic Communications Association (GCA) and endorsed by the Technical Association of the Graphic Arts (TAGA) will be held August 15–16, 2000, at the Hyatt Regency, Orlando Airport Hotel in Orlando, Florida.

**DNPS: MISSION STATEMENT**

DNPS is a technical management forum representing a printing industry wide user group perspective on concurrent digital workflow. Proactive intervention shall focus on the transitional aspects of pre-existing methods with consideration to technical development. Activities undertaken by this group will explore, discover, clarify, recommend, and unify industry efforts. DNPS will act as the industry process integrator to benefit members by promoting what we need!

**WHAT IS DNPS?**

Digital Networked Production System (DNPS) is both a committee of the Research and Engineering Council for the Graphic Arts and is a new term which encompasses the management of all concurrent digital workflows within and between companies. DNPS is a management discipline that links isolated digital activity for the purpose of developing complete digital management systems.

**IS DNPS RESTRICTED TO THE INTEGRATION OF PRE-PRESS, PRESS, AND POST-PRESS?**

No. While the three major areas of a print facility are the more likely areas of concentration, other areas such as commerce, content, process, and knowledge management are also being examined.

**WHAT MAKES A FACTORY DIGITALLY SMART?**

In brief, an organization must establish a significant digital infra/intra-structure. Capacity and management will be networked. Event-driven architecture facilitates submission and load balancing. Open digital exchange of all content, information, and instructions will be facilitated through universal receipt/distribution mechanisms. Tracking and reporting will be machine based. Management will focus on process not product.

**WHAT DOES SATURN HAVE TO DO WITH THE PRINT INDUSTRY?**

DNPS seeks technology transfer from other industries. The Saturn model will offer the print communications industry a transitional example. From this example, we hope to establish more direct efforts towards developing digitally smart factories.

**WHAT IS THE BENEFIT OF DNPS?**

DNPS will change the way in which companies do business. Both production and commerce will be effected in ways not currently understood. DNPS will allow contributors to do more with less, fast and flexible. DNPS is a business enabler.

**CAN I BUY A DNPS?**

No. You have to build your own.

**WHO IS INVOLVED WITH DNPS?**

DNPS fosters cooperation between both print technology and information technology professionals. Any subject expert in the print communications and related industries can make a contribution to DNPS by incorporating their expertise into the larger effort. People, companies, associations, and workgroups create a technical forum used to examine industry activity.

For more information, visit http://www.dnps.org on the Internet or call TAGA at (716) 475-7470.

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**Upcoming Events**

**DNPS SMART FACTORY CONFERENCE**

AUGUST 15–16, 2000

The R&E Council’s Digital Networked Production Systems (DNPS) Smart Factory Conference, co-sponsored with the Graphic Communications Association (GCA) and endorsed by the Technical Association of the Graphic Arts (TAGA) will be held August 15–16, 2000, at the Hyatt Regency, Orlando Airport Hotel in Orlando, Florida.

**DNPS: MISSION STATEMENT**

DNPS is a technical management forum representing a printing industry wide user group perspective on concurrent digital workflow. Proactive intervention shall focus on the transitional aspects of pre-existing methods with consideration to technical development. Activities undertaken by this group will explore, discover, clarify, recommend, and unify industry efforts. DNPS will act as the industry process integrator to benefit members by promoting what we need!

**WHAT IS DNPS?**

Digital Networked Production System (DNPS) is both a committee of the Research and Engineering Council for the Graphic Arts and is a new term which encompasses the management of all concurrent digital workflows within and between companies. DNPS is a management discipline that links isolated digital activity for the purpose of developing complete digital management systems.

**IS DNPS RESTRICTED TO THE INTEGRATION OF PRE-PRESS, PRESS, AND POST-PRESS?**

No. While the three major areas of a print facility are the more likely areas of concentration, other areas such as commerce, content, process, and knowledge management are also being examined.

**WHAT MAKES A FACTORY DIGITALLY SMART?**

In brief, an organization must establish a significant digital infra/intra-structure. Capacity and management will be networked. Event-driven architecture facilitates submission and load balancing. Open digital exchange of all content, information, and instructions will be facilitated through universal receipt/distribution mechanisms. Tracking and reporting will be machine based. Management will focus on process not product.

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**New Book on Leadership**

*Leadership: A Quick and Easy Guide* is a book that prospective leaders, beginning leaders, or experienced leaders can use to perfect their skills and traits to be more effective leaders. Authors professors Barbara Birkett, Warren Daum and Miles Southworth believe that while we all have some innate leadership aptitude, we can, with dedication, always improve our leadership skills. First the reader should take a self-assessment of his or her own skill and trait weaknesses and strengths. The reader can then study the skills and traits of proven world leaders. By comparing their own skill to those of known leaders, a leader wishing to polish his or her skills will know where to start and what goals to set for themselves.

*Leadership: A Quick and Easy Guide* identifies each skill and trait characteristic identified as necessary for effective leadership. The book is a powerhouse of information, written in a succinct and brief style, packed onto 160 pages. It minimizes the extensive reading required for those other thick and expensive leadership textbooks. Each chapter offers a list of helpful hints for each skill and trait that will help the reader perfect his or her own. The book has a section of one-paragraph helpful reminders and tips to follow to impress others or to get others to believe in and follow your own plans and goals.

The authors encourage all you leaders to realize that managers in your own organizations are leaders in each of their own domains. This book could help them become better managers and eventually leaders. After all, when your managers are doing well, it reflects on your good leadership. Their success is your success.

The authors have been associated with the Rochester Institute of Technology. All three have taught The Dynamics of Personal Leadership course to students at RIT. The course was developed by them to help students develop their own leadership style to pursue a successful career as a manager and then as a leader. The authors have each had experiences as leaders during their career. The authors are active advisors and consultants to companies and academic institutions.

*Leadership: A Quick and Easy Guide* is a 160-page, hardcover book, priced at only $19.95 each plus shipping. A special offer of 10% off this purchase price is extended to TAGA Members. Quantity purchase discounts are available. The book is now available from Graphic Arts Publishing, 3100 Bronson Hill Road, Livonia, NY 14487, 716-346-2776, fax 716-346-2276, email MFSouth@aol.com.
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