



# Toward Standards for Desktop Prepress



## PDF Workflow: Two Years Later

BY DAN BRILL

IT HAS NOW BEEN OVER TWO YEARS SINCE ADOBE RELEASED *ACROBAT 3.0*. THIS version of *Acrobat* introduced a new set of specifications for its Portable Document Format (PDF) which for the first time supported the requirements of high end process and spot color printing [Editor's note: see GRAPHIC EXCHANGE Jan/Feb 1997 — PDF file available upon request to [gxo@tube.com](mailto:gxo@tube.com)].

Prepress workflows designed to capitalize on PDF's page-independent object-oriented architecture have been eagerly anticipated by the printing industry as a means of overcoming the arbitrary and unpredictable nature of PostScript. Yet today, despite its widespread implementation as a screen-based format for data exchange, despite its high visibility and interest level at major trade shows and conferences, despite the fact that the number of *Acrobat Readers* which have been downloaded from the Adobe web site approaches 25 million, PDF is only being used for a small percentage of high end print jobs, and by just a handful of printers and prepress houses.

Why has it taken so long for PDF to be integrated into high end prepress workflows? What factors might accelerate its acceptance and implementation over the short term? Can PDF become a de facto standard for print-based file transfer? And why should either the graphic design community or those in the printing industry care?

### PRE-SEPARATED WORKFLOWS TO COMPOSITE

Current prepress workflows are predicated on the "hand-off" of native application files. Although these application files may take the form of any number of formats, either Mac or PC, it is *QuarkXPress* files which represent the "standard". This hand-off represents the key link in the production chain. Of course, bitmap images, vectors and fonts are all part of the delivery package which must be accounted for, checked and included in the job in order to perform final output.

Whether this data is destined to be sent to a PostScript RIP or through proprietary systems such as Scitex (LW/CT) or Heidelberg (Delta list), it must first be converted to PostScript, and this normally entails generating *pre-separated* CMYK and/or spot colors from the application, typically *QuarkXPress*.



PDF, on the other hand, is based on working with a *composite* workflow.

To some members of the graphic arts industry, this discussion of pre-separated versus composite workflow is pivotal to their acceptance of a PDF workflow. By postponing separations until later in the workflow, certain critical preflighting and printing functions must be performed farther downstream, notably trapping (PDF files do not preserve *Quark* trapping), and naturally, color separations themselves. If the workflow is proprietary, then this is a lesser concern since these functions would happen in a different environment anyway. In fact, Scitex has been performing color separations at the RIP for many years.

But if the workflow is a PostScript workflow, it means trapping and separations will happen at the RIP — and this, in turn, depends on OEM implementation of PS 3 features.

Agfa, ECRM, Fujifilm and PrePress Solutions all announced support for Adobe in-RIP trapping (IRT) in October at the last GraphExpo show in Chicago. This technology is based on three components: the trapping engine, standards (based on PostScript and Adobe's Portable Job Ticket Format) for describing controls and results, and trapping controls within page layout applications such as *PageMaker* and *QuarkX-Press*. Of course this means that trapping would be defined at the design stage. Is this what content creators want?

According to Adobe, IRT supports trap zones, the ability to trap all elements in a page, and printing composite PS 3 and PDF files. Additionally, it supports rich black, an unlimited number of transparent and opaque inks, including spot colors and varnishes, advance gradient processing and sliding traps.

An important note in the discussion of separations is that, although one may produce PDF separations, to date there is no way to "lamininate" these separations back together in *Acrobat* in order to be able to view a composite image of the page.

## OBJECT-ORIENTED AND EXTENSIBLE

PDF is a file structure which organizes PostScript into "objects", whether text strings, vector images or bitmap images. PDF then uses pointers, dictionaries, streams and operators to define the characteristics and locations of these objects. Unlike PostScript, PDF sets basic defaults for each new page and describes objects for that page relative to the page defaults. This is how PDF's page-independence can be achieved.

The evolution of applications to object-oriented programming has mirrored the exponential increases in desktop computing processing power. Object-oriented approaches to design applications (such as the Adobe *K2* demonstration by Apple's Steve Jobs at Seybold San Francisco) will expand designers' ability to play with text or images in ways beyond anything current applications permit: skewing, shearing, scaling and editing either text or images, separately or in combination — in essence, eliminating any distinction between

bitmap and vector data.

Hand-in-glove with object-based architecture will be a continued reliance on providing extensibility for third party developers to supply specialized tools and functions, a strategy that has been extremely successful for Quark, Adobe (especially with *Acrobat* and *Photoshop*), and Netscape.

As time goes by, Adobe hopes that *Acrobat's* extensibility in particular will be the foundation for securing its role as the standard funnel for prepress throughput. Although developers have been slower than one might have expected to build *Acrobat* plug-ins which would solve some of its limitations as a prepress tool, of late there have been a number of additions to the plug-in family, with more to come (see a selection illustrated with this article, or visit [www-pac.adobe.com/purchase/acrplugins.html](http://www-pac.adobe.com/purchase/acrplugins.html) for an up-to-date list).

What has impeded *Acrobat* plug-in development thusfar is a combination of factors, among them:

- a limited market for plug-in products
- technical difficulties in writing code for *Acrobat's* architecture
- price barriers for plug-ins vs. development costs
- inability of third party developers to support customers

However as the PDF movement gains momentum, we will be sure to see continued efforts to fill the holes still left in *Acrobat's* functionality.

## CTP — DRIVING DIGITAL STANDARDIZATION

"Computer to plate" — suddenly this phrase is capturing the attention of printers everywhere. I can almost picture them thinking, "Plate? I understand 'plate'. I'm halfway there."

But of course it's the "computer" part of CTP that has printers nervous — and with good cause. Without that familiar safety net called "film" and "film house" in between the "computer" and the "plate", printers stand to be exposed to risks that no printer wants to face: an unpredictable workflow and the dreaded words "down time" — or worse.

Printers see CTP as an unavoidable part of their future, and as a group they're crying out for "digital film" — a guaranteed delivery mechanism for ensuring that jobs can be proofed reliably and move from bits and bytes to ink and paper with total confidence. Some see TIFF/IT-P1 as the solution; others believe PDF may be the answer.

In all cases, the evolution to CTP at the back end is applying pressure on the front end to find a standard for delivering digital data that will keep the presses rolling and ensure that customers' jobs are printed right — the first time.

But how close is a PDF workflow to delivering what the printing industry needs?

## PDF WORKFLOW: PROMISES UNFULFILLED?

By creating a version of *Acrobat* for high end prepress and providing a set of open specs for developers to work

with, Adobe has done a great deal to begin the process of building a predictable desktop prepress workflow. But ironically, it is proprietary solutions providers like Rampage, Scitex, Shira, Oris, Creo and Heidelberg who have moved quicker than most PostScript prepress vendors to integrate PDF handling into their systems.

Among PostScript workflow vendors, by far the most aggressive approach to PDF workflow has been by Agfa with its Apogee system, which officially began shipping in June. Apogee is a very comprehensive PDF solution but still too new to have been tested in a Canadian production environment.

Yet today, more than two years after the introduction of *Acrobat 3.0*, obstacles remain in implementing a smooth and seamless desktop-based PDF workflow, both from the creative side and on the prepress side. Let's review some of these troublesome issues and holes.

**Placing and distilling PDF in *QuarkXPress*.** In September, Quark, after receiving (and rejecting) heavy criticism for not supporting PDF, finally offered a beta version of a *QuarkXPress* XTension called PDF Import/Export XT (go to [www.quark.com/files/xtquarkxts\\_40.html](http://www.quark.com/files/xtquarkxts_40.html)). This XTension is supposed to allow you to import PDF pages into a *QuarkXPress* document and create PDFs. But before you get too excited, it only works with *QuarkXPress 4.02* or higher, only with Laser-

Writer 7 or 8, it generates PDF no differently than using the *Acrobat* DistAsstDaemon (data to PostScript, to *Acrobat Distiller*)— and it only prints low res. I wish I could report that it works fine otherwise, but when I tried to launch *Quark 4.04* with the PDF Filter installed, all I got was this:



Then my system froze.

And lest we forget, that trip from *Quark* through PostScript to PDF is still slow and torturous — and it ties up a CPU for as long as it takes to generate the Postscript file. And there's still no guarantee the file will distill.

A much better tool for generating PDFs today is *MadeToPrint XT*, by Callas Software ([www.callas.de](http://www.callas.de)), an XTension that saves PPD settings and Distiller Job Options, can batch process files, and allows the creation of settings for multiple resolutions and output devices.

**Blends and duotones.** PDF does not support duotones or tritones, nor does it recognize blends made of spot colors. Even process color *Quark* blends are problematic.

**Distiller errors.** What error log? When Distiller fails because of a PostScript problem, it simply fails. No meaningful hints, no record of where the error occurred, just (if you're lucky) a dialog box that might read something like this:

## NEW TOOLS AND PLUG-INS FOR ADOBE CONTINUE TO ENHANCE PDF'S VIABILITY AS A STANDARD FILE FORMAT FOR PREPRESS DATA EXCHANGE



**Callas PDFtoolbox 1.1 PDF Inspektor** [[www.callas.de](http://www.callas.de)]. Check fonts, RGB images, resolution



**Intense Software PDF Embedder** [[www.intense-software.com](http://www.intense-software.com)]. Attach files to PDF (e.g. AppleScript)



**Export Content.** Export individual elements (text and images) of a PDF page to local hard drive.



**Enfocus PitStop** [[www.enfocus.com](http://www.enfocus.com)]. Edit text, cut and paste text and images.



**Quite Software Quite Imposing Plus** [[www.quite.com](http://www.quite.com)]. Impose and step & repeat.



**Enfocus Guides** [[www.enfocus.com](http://www.enfocus.com)]. Set guides in Acrobat. (Free)



Even if *Distiller* succeeds, you're not home-free. If you need to export that PDF back to PostScript or EPS, you may still hit an *Exchange* error that could look like this:



**Job tickets.** A job ticket married to a PDF is a necessity for identifying specific printing specs. Adobe has recently been championing its Portable Job Ticket Format (PJTF), a feature of PostScript 3 RIP technology. But to date, only Agfa has claimed to have implemented PJTF (in its Apogee workflow) and once again, there is very little track record to determine just how well it works.

**Last minute changes.** One of the advantages of PDF is its page-independence, which allows an individual page to be swapped in and out. However when it comes to actually editing PDF pages in *Exchange*, capabilities are severely limited. Enfocus offers *PitStop*, an *Acrobat* plug-in that permits scaling of images and minor text changes. But *Acrobat's* ability to alter content is limited to only minor text editing, and only if the font is available. Automatic text reflows to accommodate changes? Forget it.

**Proofing.** Here's a subject sure to liven up conversation in

any pressroom. With a traditional analog proof, there was an implicit guarantee that the content and color on the proof would match the press sheet, since both were produced from the same film. But in a world of digital proofs and CTP, where a file may be ripped once to a proofer and again to a platesetter, using different RIPs, does the guarantee hold?

This is where the ROOM (Rip Once Output Many) vs. Agfa's NORM (Normalize Once Rip Many) vs. PAP (Proof and Pray) debate gets hot and heavy.

Adobe hopes to solve the color fidelity issue through ColorSync profiles attached to PDFs. But in the final analysis of course, accurate color management will hinge on proper calibration of every proofing device in the production chain — up to and including the client.

**Imposition.** Right now, there is no commercial imposition software package on the market that imposes PDF files directly. Both PREPS and DK&A *InPosition* create impositions from PDF pages, but both perform this through sleight of hand manoeuvres which export PDF to EPS. However, just out is a new plug-in for *Acrobat* called *Quite Imposing* which offers a first-generation approach to imposing PDF pages ([www.pluginsource.com/acrobat/quiteplus.html](http://www.pluginsource.com/acrobat/quiteplus.html)).

**Lossless compression.** Debate has raged concerning *Acrobat Distiller's* use of JPEG as a compression method. JPEG is *not* a lossless compression scheme, but its proponents contend that minimal JPEG compression will yield virtually undetectable results on press. Others point out that this is very much dependent on the unique characteristics of the job. This is a discussion which will not be resolved soon.



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**Ambia Save as RTF** [[www.ambia.com](http://www.ambia.com)]. Save as Rich Text Format from PDF.



**Enfocus Eyedropper** [[www.enfocus.com](http://www.enfocus.com)]. Measure CMYK values (Free).



**Ambia Re:Mark** [[www.ambia.com](http://www.ambia.com)]. Annotate, underline, markup and select.



**Integrating supplied film.** One of the thornier issues in a PDF workflow revolves around how to integrate existing film into a digital workflow. Copydot scanning of separations generally produces four 1-bit TIFF files with a low res placement file or DCS 2 files. This can work for a proprietary workflow, but, since *Acrobat* only accepts 8-bit data, an open PostScript workflow dictates dependence on an OPI workflow to incorporate scanned film separations.

Likewise, any other 1-bit data, like pre-ripped FM screening or TIFF/IT files, will not pass through a PDF workflow without OPI or until such time as "wrappers" can be written for these kinds of data.

#### WHO'S USING 4/C PDF WORKFLOW TODAY?

The short answer is that, although PDF is not uncommon for use in single color or spot color workflows, few Canadian printers have implemented any kind of PDF workflow for full color work, and even fewer can say PDF is in use consistently. And as far as I know, there are no publications in this country which use high end PDF as their data exchange format for printing — which is not surprising, given the obstacles detailed above.

Webcom is one Canadian printer that encourages its customers to use PDF for single color book work. But Webcom's Digital Technologies Manager, Phil Thompson, warns in the company's latest newsletter that "Cover files [i.e. full color files] are not quite ready for the PDF revolution. Often our prepress department will need to make adjustments to the

spine of a book or adjust trapping values. PDFs are currently not editable enough to allow us to do this."

In the U.S., several companies (Quad Graphics being a frequently cited example) report heavy reliance on PDF for high end CTP work. However in virtually every case, PDF is an intermediate format used to feed a proprietary CTP system.

PC WORLD, a large U.S. computer magazine, now accepts four color ads as PDF, and has produced a 4-page guide for advertisers on how to set up *Distiller* for producing files (which is posted on Agfa PDF Evangelist Michael Jahn's site at [www.jahn.org/pdf3/pcworld.pdf](http://www.jahn.org/pdf3/pcworld.pdf)).

#### THE NEXT SET OF PDF SPECS

The current version of PDF is version 1.2, which has been the standard since the release of *Acrobat 3.0*.

A new set of specs, version 1.3, is currently under discussion by CGATS (Committee for Graphic Arts Technology Standards, which submits its recommendations to ISO and ANSI, the international and U.S. standards organizations) for probable approval in the first half of 1999. Part of version 1.3 entails defining modified specifications for a customized version, known as PDF/x, which will be a subset of PDF specifically geared for high end commercial printing requirements.

Meanwhile, Adobe is reported to be in the final testing stages of its next major *Acrobat* upgrade. Trade sources say *Acrobat 4.0* should be out in February, and will contain a number of major enhancements, including improved editability, support for a wider range of file formats, and additional tools which are presently available only as plug-ins.

It shouldn't be too long before we find out how many of today's concerns with PDF workflows Adobe has addressed.

#### QUARKXPRESS 5 VS. ADOBE K2

There's a big battle coming within six months, and the outcome could shape the future of desktop workflows into the next century.

I'm talking about Quark's announcement that *QuarkXPress 5* will be ready in the first half of 1999, which coincidentally is rumoured to be the same time frame for the unveiling of Adobe's new page layout package, codenamed *K2*.

Both companies are (not surprisingly) being very tight-lipped about their respective products, but off the glimpse we have had of *K2*, Quark's past history, and recent confrontations between these archivals, we can probably deduce the following:

- the all-too-brief demonstration of *K2* at Seybold showed us that Adobe has employed advanced object-oriented programming which will deliver features beyond anything presently in *QuarkXPress*; this undoubtedly has the denizens of Denver worried;
- *K2* will include seamless integration with other Adobe products, and will fit tightly into a PDF workflow;
- given that Quark has not made a habit of delivering

PC WORLD, a major U.S. computer magazine, provides detailed specs for its advertisers on how to produce high end PDFs for publication; specifications for *Acrobat Distiller Job Options* are shown above.



new versions terribly often, it's safe to assume that its strategy and timing for *QuarkXPress 5* is centred on defending its user base from Adobe, and not necessarily on improving its product;

- Adobe will do everything possible to make it dead easy for *QuarkXPress* users to switch layout applications; Quark will do everything possible to make version 5 incompatible with *K2* — and as painless (read: cheap) as possible to upgrade.

Quark has a long established history of doing what's good for Quark — regardless of whether it's in the best interests of its users. Adobe, on the other hand, has a history of moving cautiously on product development.

But Adobe is holding the cards right now. Adobe owns PostScript. Adobe owns *Photoshop* and *Illustrator*. Adobe owns PDF. And Quark's following is bound to be less than loyal, having been maltreated for so long.

If Adobe can deliver a product that's stable, and intuitive, and more fully-featured, will Quark be able to withstand the challenge? My opinion is: put your bets on *K2*.

And then what?

Will we all be happy knowing that Adobe owns the whole high end publishing market — including the fonts?

#### WHAT ABOUT TIFF/IT-P1?

TIFF/IT-P1, a high end variation of TIFF, is an ISO recognized standard for digital file delivery with a great deal of support in the high volume printing and publishing community. It is well-suited to proprietary prepress systems but, due to its 1-bit file format, not so advantageous in a desktop environment.

*TIFF-IT XT*, by Total Integration, is a *QuarkXPress* XTension which lets users place composite TIFF-IT files, which can be printed to any PS 2 or 3 device at full resolution. However it carries a hefty retail price of \$2,995 (US).

TIFF/IT files are bitmap files which are bigger and less editable than PDF,

but arguably more predictable. Nonetheless, even TIFF/IT's staunchest supporters acknowledge that preflighting is a necessity (two utilities commonly used are *TagScan* and *AdCheck*).

More important, TIFF/IT-P1 only supports process color. A new spec called TIFF/IT-P2 is presently under review by CGATS. This version would introduce spot color capability. However it is not close to final approval as of yet.

#### IN SEARCH OF A PREPRESS STANDARD FOR THE DESKTOP: IS PDF READY FOR PRIME TIME?

My favorite user list is still Dave Mainwaring's Computer-to-Plate Pressroom (CTPP) list ([www.ctpp.com](http://www.ctpp.com)). If you really want to know how the big printing and publishing folks think, there are few sources of information better than CTPP.

PDF and TIFF/IT are constant topics among these users. Some of the discussion that goes on borders on the esoteric, but a great deal of valuable information on digital workflow is also shared through these dialogues.

Adobe's imminent release of *Acrobat 4.0* will surely spark more intense interest in PDF's strengths and weaknesses as a cornerstone for digital workflows of all kinds.

I will venture a guess that the optimism which flared two years ago with *Acrobat 3* will finally be rewarded with this release. Adobe has been meticulous about consulting with the trade on the various issues which surround the workflow needs of the printing industry. Private product previews and focus sessions have demonstrated an impressive amount of thought and effort behind reconciling the deficiencies which up until now have hampered the use of *Acrobat* as a portal to reliable print production. Expect *Acrobat 4.0* to pave the way for third party developers to seal the holes in the PDF workflow.

*K2* will just be icing on the cake. \*

SPECIAL THANKS TO DAVE KEW FOR HIS INVALUABLE ASSISTANCE WITH THIS ARTICLE.

# PDF in the PC world: balancing corporate demands

BY LERRICK STARR



EVERY ONCE IN A WHILE the World Wrestling Federation comes to town, bringing with it all manner of muscle-packed excitement — a battle ballet choreographed in the same style as the Microsoft vs. Apple non-event.

But there's a slugfest shaping up between "Adobe" and "the concept that the Mac is the only place to do creative". With the opening salvo Adobe levelled the playing field by introducing *Acrobat* and the Portable Document Format (PDF) to the PC workflow.

The introduction of PDF files as a common format for data exchange and imaging tasks has changed many of the fundamental elements of the PostScript workflow, including the replacement of a separated workflow with one that's composite. However, the use of PDF does not preclude a separated workflow and, in fact, offers some unique opportunities for those who feel a change is as good as a vacation.

Portability, font inclusion, relatively small file sizes, platform independence, and a plethora of low cost plug-ins bolsters the argument for acceptance of PDF as a new standard for prepress imaging.

## TORTUROUS PC WORKFLOW

Prepress tradition says there are a million ways a PC job can become a challenge, but let's just cover the main ones:

1. PC printer drivers subscribe to the "one job/infinite interfaces" philosophy.
2. PC monitors are adjusted for color balance by attaching an anti-glare screen.
3. The font "Helvetica-Narrow" is not the same as the font "Helvetica Narrow".
4. The preferred page layout application for high end prepress work is Microsoft *Word* using *Harvard Graphics* and *Excel* imports.

PC artists practice day and night, honing their creative skills. The result — the supremely unprintable PC PostScript file. The dreaded ".prn". (Ironic, isn't it, that ".prn" is short form in DOS-speak for "printer" file? — as if!)

## SERVICE BUREAUS HATE 'EM

A native PC application file can turn a traditional service bureau into a scaredy-cat. The moment it's opened on the Mac is the moment the game is over. The font issue in itself is enough to discourage the stoutest of heart. What happens when relatively inexperienced printers try imaging directly to plate from PC files? Without all the boring details — wastage, big expensive plates in the garbage.

What does PDF mean to the computer-to-plate scenario? Stability (a relative term), reproducibility and accountability. Today it can also mean less than bulletproof font inclusion; bleed area workarounds; absence of imposition and trapping programs to handle native PDF format and instead work in PostScript; the absence of an installed base of PS3 RIPS — in fact, it has all the earmarks of an immature technology.

So what? The bits that work (and that's the lion's share) work well!

Adobe doesn't even support a separated PDF workflow, yet you can impose a job in *QuarkXPress* (using DK&A's IN-position), turn separations on, PostScript it, and distill the resulting .ps file.

You can yield a PDF document where:

1. An entire imposed publication is contained in one file.
2. *Quark* trapping is preserved.
3. Each color becomes its own PDF page.
4. Pages can be printed from *Acrobat* or downloaded directly to a PS3 RIP.
5. Marks, color bars, folds, plate identification and position, fonts and images are preserved in the file.

Whether separated or composite, PDFs can be burned into a CD and shipped to a printer as "digital film" or published for download and remote printing. Alternatively, PDFs circulated on removable media can be functionally "locked" preventing unintentional alteration of its contents.

## MAKING THE MAC IRRELEVANT

If everything is included in the PDF, and a PDF is platform-neutral, then the platform on which the content creation is accomplished becomes increasingly irrelevant. When large corporations farmed out content creation to Mac-based production artists, much of the impetus was provided not by the excellence of Mac-based workflows but by the incompetence of PC-based workflows.

Soon, however, the adoption of PDF workflows for corporate content creation will mean that corporations will move away from traditional outsourcing and nestle within the corporate structure, running on PC boxes. Corporate communication requires it. Repurposing of information requires access to source data in a seamless fashion, and that dictates one common interface, one operating system. And the corporate world runs on Intel chips and the WinOS.

#### WHAT CORPORATE CLIENTS GAIN WITH PDF

The PDF workflow is still work-in-progress for true high end prepress work. One can impose, trap and image in a PDF composite workflow *but* to make the most of PDF imaging, one must be prepared to perform some experimentation.

However most print jobs produced by corporate in-house content creators are one or two color jobs for short print runs, and perfect for CTP applications. For a large part of the corporate print load, PDF does the job well. For the rest, it's no worse than before. No losers on the PC side.

In the investment/financial industry, for instance, where turnarounds are demanding and distribution is a nightmare, the dissemination of timely and accurate information is fundamental to quality investment advice. Trading decisions worth hundreds of millions or more become winners or losers based on the timing of information on the market's state. A summary of the business day's analysis and stock market movements needs to be in clients' hands the next morning. The pressure to deliver this brand of printed material every day, at the same time, and without fail makes a PDF workflow the only contender in the foreseeable future.

One instance of the benefits of a PC/PDF workflow is a downtown Toronto financial printer I know whose clients need quick turnaround and reliable imaging with next day delivery. After coaching its clients in creating PDF files, this printer's production difficulties virtually disappeared. Very little customer on-site instruction was required. Training included forwarding the latest PDF creation documentation available from the Adobe website, and in about half the cases a telephone call to work through the settings. With few exceptions PDFs now pass through production uneventfully.

#### THE BEAUTY OF ONE FILE FORMAT

However PDF is not a magic bullet. A "bad" PDF *can* be generated. Operator errors setting up *Distiller's* Job Options have to be addressed by the prepress department and correcting them still takes time and incurs additional charges.

Troublesome PDFs are edited in *Acrobat* using *Enfocus' PitStop*. But the ability to exchange and edit jobs in a single application, regardless of the originating applications, is worth the price of admission.

Larger PDFs are PostScripted, imposed in DK&A's *INposition*, and ripped to film; the film is stripped and Dylux

proofs are burned for final approval. A typical night's production averages two hundred 8 1/2 x 11" pages imaged four-up. At the busiest time of the year a three-person team can run over 500 pages per shift if the majority of work is comprised of PDF files that are prepared correctly.

In this case it doesn't matter that PDF is less than perfect for four color print production; the clients just want it to look good and be delivered on time. This is true of corporations all over the world, and if the printing industry wants to tap into these markets, it had better get PDF-knowledgeable, and fast.

#### WILL PDF ELIMINATE SKILLED LABOUR?

The widespread adoption of PDF as a prepress standard is bound to have broad implications for industry workers. Less skill is needed to image from a common format than from many individual applications, each with its unique quirks. Plug-in technology will allow the eventual inclusion of fully featured imposition, trapping and other prepress technologies within *Acrobat 3.0*. Version 4.0 is around the corner — and rumour is that it will include a broader and more useable set of PDF editing tools and other capabilities.

With a trend toward in-RIP trapping and color separation, PDF-capable PS3 RIPs, and simpler imposition programs, operator intervention will inevitably be the exception, not the rule. People with minimal prepress knowledge will be able to image film reliably from PDFs.

#### WHY PDF AND NOT SOMETHING ELSE?

In the corporate marketplace it's too late for anything but PDF. It's just too damn convenient.

PDF for the web is WYSIWYG. You get what you see. All those low-res graphics coming out of utilitarian PC software look as good as anything else when published at 72 ppi. Best of all, they can be cranked out by PC operators with little or no publishing experience. One operator can handle a large volume of PostScript files sent over a network to a hot folder set up for distilling and still have time left over for postflighting and repurposing for print publishing.

Making a PDF for high end prepress is no more difficult than getting the settings in *Distiller* correct. But in generating the PostScript file which will be distilled into a PDF there is still an onus on the content creator to set the appropriate density for their images, get spot colors right, ensure fonts are embedded, and set compression (or lack of it) correctly.

Corporate Canada is already turning its print material into PDFs for storage, e-mail distribution and web sites. One copy of *Distiller* set up with watched folders can prepare files for both web and print almost simultaneously. Content creators throughout an organization can create PDF files by targeting these hot folders over the network. Each hot folder can have different setups, including resolution, font inclusion, degree of image compression, final output in CMYK or RGB, and

other options. *Acrobat* plug-ins will increase the choices to include trapping instructions and imposition information.

### IT'S ALL IN THE INTERFACE

Mac people know about standardization. The Mac interface championed the cause long ago. *Photoshop*, *Illustrator* and *PageMaker* feel very much the same. If you know the Adobe suite, then *QuarkXPress* isn't hard to figure out.

Now jump to the PC. *Word* is no help with *CorelDraw*, nor does either of them help with *XPress*. Try moving from *Corel Ventura* to *PageMaker*. Very little on the PC feels the same, except what's contributed by the OS. Print setup and dialogue boxes look different, presenting print options in different places. Each application requires a relatively detailed knowledge of its innards for an operator to use it efficiently. The PC will never have the same kind of integration that we've seen on the Mac (not at least until Mac OS runs on Intel).

One of the main reasons for Microsoft's success with its suite of office products is simply that it is reasonably well-integrated. Inadequate prepress capabilities will never be a priority for corporations as long as DTP competence requires large investments in time and training. Quality requirements will fall to match the output — not vice versa!

### WHAT? FINALLY A PC STANDARD?

Microsoft, Corel, Quark et al can't agree on standards, so in steps Adobe and creates one that's platform- and device-independent, with fonts and graphics in one container — which solves the compatibility issue once and for all.

As a business move it's pretty impressive. When prepress shops standardize on *Acrobat Exchange* for output, they won't have to buy every PC program in which a job could be created. And to all of corporatedom, Adobe will sell its software — at a modest price (thereby guaranteeing acceptance).

So there it is, the publishing battle of all time — won before it was fought. Maybe *Acrobat* was less than fully-featured when it was introduced to disguise Adobe's true intent.

The only chance that big DTP application folks may have is to adopt PDF as their native file format.

Whazzat? As the bell rings for the next round, Adobe the Killer, the San Jose Swiller, eyes the championship belt, when a lone voice rises above the screaming crowd, "That wasn't a match! The fix was in from the start!" \*

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## Standards

# Ghost in the Machine: Standards for the Printing Industry

BY SHANE STEINMAN



THERE IS AN INTERESTING DEBATE CURRENTLY UNDERWAY WHICH may, if it results in consensus, redefine the printing industry.

Stemming from its roots as an apprenticed trade, print has long been the domain of artisans whose honed skills were not so much in knowing what buttons to press, but how to press them. This resulted in the formation of a technical service-based industry.

However as the machinery of the trade became "smarter"

and more automated, many have begun to view print as a fairly typical manufacturing model and are wondering why no one ever realized this before. Often, this phenomenon is attributed to a lack of self-awareness among printerfolk, who are obviously pining for the "good old days" when print was considered a sacred, somewhat mysterious craft.

Well, the truth of the matter is that neither the craft model nor the manufacturing model describe this business adequately. This divergence in opinion is at the heart of the argument, and which must be resolved in order to achieve standardization of the industry's processes.

It might be helpful if we viewed print as a conjugation of two separate business models. On the front end of the cycle, we have a high-variable service function that we commonly refer to as *Content Creation*. At the back end, we have a low-variable manufacturing system that we call the *Press Run*.

How many times have we heard press operators complain about "artsy-fartsy" designers who know nothing about printing? How often do we hear the moans of art directors

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lamenting about how printers butchered their work? It's all a tad schizophrenic.

The stomach complains about what the mouth eats. The mouth complains about how the stomach feels.

*We need to take a step back and snap a shot of the whole scene.*

*The machine is the technical precision of the left brain.*

*Art is the unlimited abstraction of the right hemisphere.*

*We are the third component of this most expressive trinity; the embodiment of the force that merges all, in print.*

Between the two halves of our brain is an electrochemical highway, the corpus collosum, that relays messages back and forth between the two sides. If not for this conduit, our left hand would literally never know what our right hand is doing.

At one time, the art and the mechanical skill that culminated in printing were one. Too commonly, the two "halves" now experience an adversarial and contentious relationship.

Content Creators live in a fast-evolving digital world that changes almost daily. Software updates flood through the door, often leaving disaster and confusion in their wake. New fonts appear hourly. Training commitments are low. Hours are long. Standards would be helpful, but the targets keep moving and many of the arrows are bent.

Contrast this with the world of the Press Run, where mechanical processes benefit from previously implemented standards. Here, there are controls for the controls — and ways to measure your yardsticks.

Take this short test...

*The Electric Doodad Acid Test.* Review the two statements below and select the correct answer:

*Standards work because they dictate rigid operational guidelines that enable us to exercise control over processes and establish a reasonable expectation of predictability.*

*Standards do not work because they are too rigid and do not permit enough flexibility to accommodate new procedures, often rendering unpredictable results when confronted by new process variables.*

Answer: Of course, this is a trick question. Either statement could be valid depending upon the circumstances in which they are uttered. Chances are, if you agreed more with the first statement than the second, you work on or near a press. If you identified with the second option, you are probably sitting in front of a computer. Now if you recognized the context-sensitive nature of the two sentences, you should probably be making plans to act as the "corporate collosum" in your company. Get those two hemispheres talking!

Any good conversation starts with the identification of common ground. It's probably safe to assume that each "brain" has very similar desires, despite their different approaches to their tasks. Saving time and money, increasing quality, minimizing difficulties, maximizing profits and raising

the predictability of the process can all be safely considered to be shared aspirations. Recognizing these mutual goals, some vertical segments of the print industry are making an honest effort to increase the volume and quality of the conversation between the front and back ends of the production stream. The magazine production market, for one, has undertaken the task of improving this communication.

In 1972, Magazines Canada, an association of high-run consumer magazine publishers and printers, initiated the MACS project (Magazine Advertising Canadian Standards) to promote the adoption of a set of common reproduction specifications for heatset web offset magazine publishing. This proposed standard has since become the industry bible for determining the fitness of supplied film and proofs in the magazine market (refer to [www.magazinescanada.com/MACS.html](http://www.magazinescanada.com/MACS.html)).

With the widespread adoption of computer-to-plate (CTP) systems by heatset web offset print shops, the association has once again recognized the need for a new breed of standards to contend with the volume of digital files required to feed these imaging and printing machines. Since standard offset film and analog proofs are gradually being phased out as an option for supplying ads to these publications, safeguards and checks must be put in place to raise the reliability of supplied digital files to a point where they meet (and eventually exceed) the predictability and efficiency of film-based material. In order to do this, evaluation procedures (standards) have to be identified and presented to the market, whereupon they must be adopted in order to be effective.

People usually tend not to do things that they really don't have to do. It's not until something becomes an "I gotta" issue that things finally begin to happen. Perhaps that moment comes shockingly to life when someone realizes that their supplied film is being scanned into digital form rather than being directly plated. Copydot scanning procedures can be quite excellent and most people will never see the difference in the printed piece, but it's still a jolt to the system to realize how much things have changed. Imposition of final "flats" used to be performed by stripping pieces of smaller film together. Now, all imposition is done electronically — it's faster, cheaper, and even more accurate.

So, if all ads are going to be delivered to magazines as electronic files only, which digital formats will be used? Which favoured?

These questions have prompted the formation of a task force to deal with these issues, once again operating under the aegis of Magazines Canada. The dMACS Project is a digital equivalent of the existing MACS program with a heavy slant toward examining emerging workflow technologies.

Initially, the program will focus on reviewing current industry procedures that have been put in place to deal with the current volume of digital file submissions. Knowing that





this number will increase rapidly over the next year, the dMACS committee will be expanding the scope of its research to include the identification of workflows and file formats which promise to deliver us from the many persistent problems that besiege weary imaging operators.

It is the mandate of effective standards to offer us control over variables by neutralizing their randomness. Hence, standards provide us with predictability. Thusfar, exceptional benefits (real and potential) have been attributed to three file formats: PDF/x, TIFF/IT-P1, and DCS 2.0, each of which satisfies (in its own way) our need to resolve process variables.

These file types, and their corresponding workflows, must be tied together with proven industry standards like SNAP, GraCOL & SWOP (I know, it sounds like a breakfast cereal) in order to satisfy the mechanical reproduction needs of the Press Run. In conjunction with appropriate preflight routines, software verification tools, a healthy dose of honest communication, and timely updates on new developments, the dMACS Project could serve to set a new standard for cooperation outside its narrow vertical market.

The greatest problem facing dMACS, or any other standardization project, is the digital proofing aspect of fully electronic workflows. There is a vast array of digital printing

technology out there, some of it more reliable than others — and none of this hardware offers push-button calibration that effortlessly meets any meaningful standard. Good measurement takes time and effort. Certainly, there are tools that can be used to improve the quality and color fidelity of a color output device, but they still have to be correctly employed. Adherence to some form of color standard is paramount to the success of any reproduction system — particularly when working remotely across long distances.

Satisfying an expectation of color fidelity is something for which clients are willing to pay good money. Whether this faithful rendition happens because of ICC color profiles, ColorSync technology or backwoods voodoo doesn't really matter. It just has to happen, and it has to happen quickly. To see how this all turns out, you'll have to tune into the dMACS website ([www.dMACS.org](http://www.dMACS.org)) and view the project as it evolves.

It is relatively certain that no elixir will suddenly be discovered that will make all our problems disappear. There is no magic pill. Unlike classic Greek drama where playwrights often relied upon the invocation of a *deus ex machina* to save the hero from insurmountable odds, against which he would otherwise surely have perished, we cannot depend upon a "god" to enter suspended from a wooden crane in order to set things right.

The phrase *deus ex machina* literally means *god from a machine*, although the term "god" could also be interpreted to mean "ghost", which takes me back to a time when I had to photograph a press for a company brochure. The production manager refused to let the press operator stop long enough for me to get my shot, insisting instead that I shoot the press in motion. I chose a tiny aperture for maximum depth of field and a very long shutter speed so I could get an even and smooth blur of the moving parts. During one of the exposures, the pressman slipped in and made some minor adjustments, darting here and there to tweak his machine. I didn't see the true value of that photograph until just this moment, when I realized that the blurred attendant was perhaps the truest depiction I have ever seen of the ghost in the machine. It's us.

Perhaps our hopes and dreams for a digitally-successful industry will rest solely upon the diaphanous shoulders of the *deus ex machina* that pervades the whole print community. We must accept that we're part of the same system. Creative. Mechanical. Expressive. If we cannot learn to speak with one voice, that's okay. If we cannot learn to speak the same language, that's a big problem. \*

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## COMPARISON OF FILE FORMATS

DATA VARIABLE	PDF/x	TIFF/IT-P1	DCS 2.0
<b>Addressing Problems</b>			
Font Substitutions	3	3	2
Type Reflow	3	3	2
Image Resolution	2	2	1
Missing Elements	3	3	2
Element Repositioning	3	3	2
<b>Capabilities</b>			
MAC < > PC	2	3	2
Color Safe Support	2	3	2
Compression Support	3	2	2
OPI Compliance	2	1	3
Spot Color Support	2	0	3
Editability	2	1	2*
Preflighting	2	3	2
<b>ISO Certification</b>	YES**	YES	NO

\* with software \*\* under review, adoption expected

### LEGEND (level of support)

0 = None 1 = Limited 2 = Good 3 = Full

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KODAK/POLYCHROME AD