PASS4PRESS

VERSION 7
2006/2007

pass4press

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Introduction

Version 7 of PPA's pass4press initiative is very much an evolution after the revolution of recent years. PDF/X is now recognised as the most reliable and secure way of supplying pages for printing in modern CTP environments. Effective implementation of ICC profiling is becoming the norm and its usage better understood. Accurate, consistent proofing of pages is now possible on a wide range of devices. However, there are still major changes ahead of us, particular in the area of RIP technology, controlled soft proofing and developments in the PDF/X format, so pass4press will endeavour to continue presenting these developments in a practical and holistic way.

The success of the pass4press initiative relies on distribution of the guidelines and effective communication of the principles contained within. Feedback and dialogue is just as important, and we welcome input from all areas of the industry. We aim to use the website, *www.pass4press.com*, more effectively over the next year to communicate changes as they happen.

The Version 7 guidelines represent continued efforts by the committee to develop UK practices in harmony with international standards. The priorities in 2007 will be to establish a new proofing and accreditation process, to work with international associations on matching ICC profiles to paper types, to expand pic4press and to investigate best practice guidelines for gravure printing.

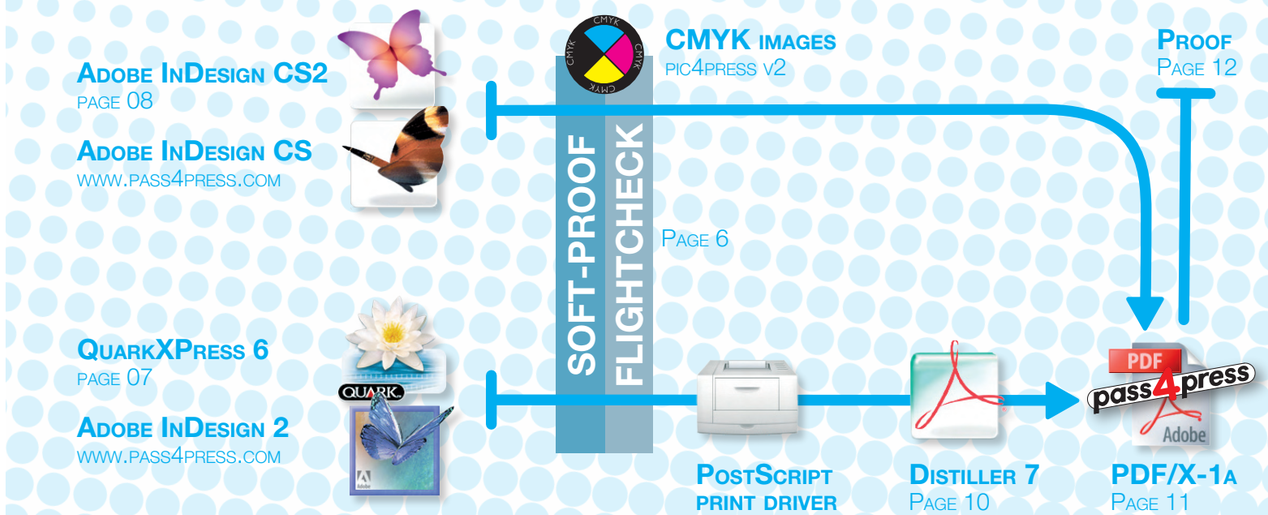
My thanks go to all PPA committee members and also the many industry bodies we have liaised with who have helped make pass4press such an effective resource.

Jonathan Moore
Pass4press committee chairman

Contents

What do I need to create a pass4press-compliant PDF?

You can export a pass4press PDF directly from InDesign CS or CS2; for QuarkXPress or older versions of InDesign you'll need a copy of Distiller 7. Use soft-proofing and preflight features in the newer applications to spot potential problems. Download presets for applications from www.pass4press.com. Settings for QuarkXPress 7 and Adobe Acrobat 8 are in development



Document preparation

Spending time planning and preparing your pages will pay dividends, reducing errors and corrections further down the production line and ensuring you produce a printable PDF

Introduction

It's vitally important to properly prepare your documents and their contents to ensure that the final PDF has the best chance of being correctly output. These pages list the main issues to watch out for when using the major imaging and desktop publishing applications.

First of all, ensure your applications are correctly configured for handling colour – you will then be able to take advantage of in-application soft-proofing features and gain a more accurate view of how your pages will print. This involves choosing the correct input (ie, **RGB**) and output (ie, **CMYK**) colour spaces. The CMYK profile you choose will depend on the combination of printing conditions and paper types. Communication between agency, publisher and printer is key. The screen grabs in this brochure contain **ISO Web Coated** as the output profile purely as an example: this profile is relevant for yellower papers that conform to **Paper Type 3/FOGRA 28L** under the **ISO 12647** standard. For glossy, whiter papers or different printing conditions, specific profiles will be required. Make sure you use the correct CMYK profile for your job. See pages 12-15 for more information.

QuarkXPress 6.5 Select *Quark>Preferences>Quark CMS*. Check the **Colour Management Active** box and enter settings relevant to the printing conditions of your job.

Adobe Creative Suite 2 set up your colour management using *Edit>Colour Settings* in any CS2 application, then use **Adobe Bridge** to synchronise the configuration across all the Suite's packages (*Edit>Creative Suite Colour Settings*).

Digital image specifications

The pic4press Version 2 brochure outlines the issues associated with digital imges, and contains numerous recommendations and guidelines.

Resolution and size Colour or greyscale continuous-tone images should be saved at 300dpi and bitmaps at 2400dpi, at a proportional print size relevant to its final size on a page. Images too small or too low resolution for their final use will have to be resupplied to prevent quality loss.

Format Ideally files should be saved as **TIFF**s, but **JPEG** compression can be used as a transmission format to speed up delivery times by reducing the file size – see note below. It is recommended that **RAW** files from digital cameras or **Adobe Photoshop .PSD** files are not used, as these working formats can produce unexpected results if not properly handled.

Compression Files sizes can be reduced by using lossy or loss-less formats. Lossy formats, such as JPEG, throw pixel information away to reduce file sizes and rely on algorithms to rebuild the discarded data when decompressing (ie, opening) the file (see **Glossary** entry, p18). Loss-less formats such as **Stuffit** or **Zip** archives look for repeating code in a file, remove it and then tag that area so it can replace that part when the file is decompressed. The file therefore contains all the information from the original and is decompressed in its original format.

Adobe Photoshop 7 and above allows you to apply **LZW**, Zip and JPEG compression within the TIFF format whilst retaining the **.TIF** file extension: only use the former two loss-less methods to avoid accidental lossy compression. If you wish to specifically use JPEG compression, use the overt .JPG format.

Colour spaces Files can be in **DeviceGrey**, **DeviceCMYK**, **DeviceN** or **Separation** colour spaces, but must only include cyan, magenta, yellow and black separations. Any objects in **Device RGB**, **Calibrated RGB** or **LAB** must be converted before being imported into a layout application. DeviceCMYK should be in an appropriate CMYK colour space (see the **pic4press Version 2** brochure for a complete explanation of profiles).

Total Area Coverage Combined colour values should not exceed 310 per cent. Note that some publishers may require a lower maximum depending on the substrate used.

Proofs A CMYK proof from ripped data should be supplied with digital images using the **proof4press** and **RIP Standardisation** guidelines (see pages 12-15), from an approved device and utilising a recognised certification strip.

Vector illustration software

Files originated in **Adobe Illustrator** or **Macromedia Freehand** should have all fonts embedded or outlined. Their colour space should be set to CMYK and all transparent elements should be flattened.

In Illustrator use *Edit>Transparency Flattener Presets* set as per the example – though check with your supply chain, as some publications will require with lower values. Freehand 'fakes' its vector transparency effects by calculating overlapping colours, so does not need to have its files flattened. Any bitmaps contained within a vector file should be embedded to avoid problems with missing links, otherwise when it comes to output the images' low-resolution thumbnails will be used. In Illustrator the rasterisation must be set in *Effects>Document Raster Effect Settings* set to CMYK and 300dpi. Freehand uses the native resolution of placed images and relies on their resolution being of sufficient quality, so does not need to be configured.

Bitmaps placed in ostensibly vector-based documents must be treated the same way as placed images in **QuarkXPress** or **Adobe InDesign**: they must be at 300dpi at their final printed size; so care must be taken when resizing the resulting file.

You can output **pass4press Version 7** compatible PDFs directly from Illustrator CS2, using the majority of same settings created for InDesign – see page 10.

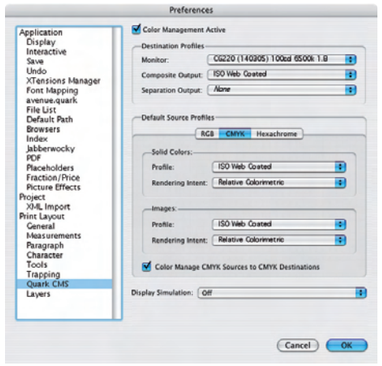
Page layout applications

01: Colours

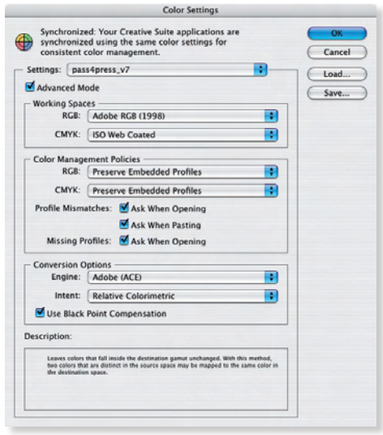
Delete any instances of non-CMYK Process colours.

QuarkXPress 6.5 Select **Edit>Colours** to display all colours used. Use the pop-up box to isolate non-Process colours – convert these to CMYK.

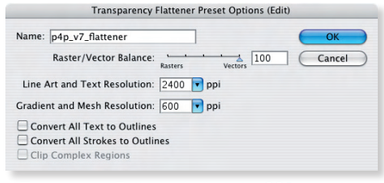
Adobe InDesign CS2 Select *Window>Swatches*. Colour spaces are shown as a small icon on the right. Use this in conjunction with the **Ink Manager** in the **Print** dialogue to convert Spots to CMYK. Note that if colour management is turned on in InDesign, all elements imported in the document which are of a different colour space than the output destination space will be transformed into the final document's working colour space when printed or exported directly to PDF.



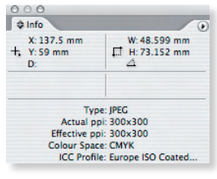
• XPress 6.5 Colour Management preferences



• Adobe CS2 Colour Settings synchronised using Adobe Bridge



• Transparency Flattening in Illustrator CS2 – use the same settings for InDesign CS2



• Transparency Flattening in Illustrator CS2 – use the same settings for InDesign CS2

02: Fonts

Ensure all the fonts required by the document are correctly linked. Delete any instances of fonts that are present in the document but not being used. Check with your supply chain before using TrueType or OpenType font formats to ensure they will output correctly.

QuarkXPress 6.5. Select *Utilities>Usage...* and select the Fonts pane. Make sure no fonts are using any pseudo text effects such as bolds or italics – only use styles present in the original typeface family. Click the More Information box to display format and location information.

Adobe InDesign CS2 Select *Type>Find Font*. This palette shows which font formats are in use and displays a warning triangle next to any problem fonts.

03: Placed Images

Go through your placed image files. Check resolutions and colour spaces; where possible try to carry out any resizing in Adobe Photoshop rather than in your page layout application, as this adds to potential output problems. Ideally every image should be placed at 100 per cent of its original size. Remember that digital images will proportionally increase or decrease in effective resolution if made smaller or enlarged on page. For example, a placed 300dpi image reduced by 50 per cent will have an effective resolution of 600dpi; the same image enlarged by 50 per cent will effectively be 150dpi. This does not apply to pure vector artwork.

QuarkXPress 6.5 Verify your images in QuarkXPress in *Utilities>Usage* in the **Pictures** pane. Click **More Information** for details such as colour space and original resolution.

Adobe InDesign CS2 Choose *Window>Links*. Modifed or missing links display warning icons next to the relevant image. To display image data in InDesign (colour space, resolution etc), select the image and go to *Window>Info*. This palette displays the position of the object, the file format (ie, TIFF), the actual and effective ppi (the resolution of the original image and the resolution at its current placed size respectively), the colour space and any ICC profile information.

04: Transparency Flattenning

Adobe InDesign CS2

InDesign's creative effects, such as drop shadows and transparency, rely on effective flattening of the file before output, otherwise the final output will often encounter problems. Work with text and graphics on separate layers, if possible keeping text layers on top, and set *Edit>Transparency Flattener Presets* in the same manner as for Illustrator on page 4.

05: Page Size

Finally, double-check your page document size is correct. In your Page Setup, create a custom paper size which is the size of your document plus 20mm in both width and depth to allow for registration marks to be added on the PDF. In this brochure a standard A4 page size is used as an example: make sure you enter dimensions which are relevant to your publication.

Proofing and file delivery

To streamline the process of receiving PDF files, it is suggested that a file-naming convention is set up with your suppliers. It is recommended that all PDFs sent are given a relevant name that includes basic information, such as title, publication name and issue date, ie: **title_pubname_jan05**.pdf. The file name should be no more than 27 characters and should not include any non-standard characters, eg: **\:/*<>**. Please note that your file naming convention cannot be implemented without agreement from your pre-press and print suppliers.

An email confirming the transmission of any digital file should be sent to the relevant production contact at the destination. Recordable media must be write-protected and contain only the files relevant to the job. Disks must be clearly labelled with a booking reference supplied by the publisher. Proofs should be produced in accordance with the **proof4press** guidelines (see pages 12-15). It is important to flightcheck PDFs before transmission, either using standalone flightchecking software or a server solution.

Configuring applications

Follow the guidelines over the following pages to create pass4press version 7 compliant PDF/X files. This page contains additional informational and issues to bear in mind when creating or using the guidelines. Guidelines are being prepared for recent releases of QuarkXPress 7 and Adobe Acrobat 8 – check the pass4press website for updates

Important information on creating presets in Adobe Creative Suite 2

Adobe CS2 products share PDF export settings, but individually-named settings files *must* be used for **InDesign CS2** and **Distiller 7** because of the difference in the way the two applications handle colour management, amongst other issues. For example, follow the naming conventions listed here: **pass4press_v7_indesign** and **pass4press_v7_distiller** respectively. The relevant one must be used – using the Distiller settings in InDesign or vice versa can cause serious problems.
Colour management must be enabled to export a **PDF/X1-a** from Adobe InDesign CS2. However, this will convert all colour data to the specified CMYK profile, which may result in unexpected colour shifts if you have not properly prepared your images. Print a **PostScript** file if you are unsure.

Although QuarkXPress can communicate directly with Distiller 7 to create a PDF/X, you need to set up Distiller with the settings on page 10. You can also use these settings to ouput PostScript files created in any older versions of InDesign or XPress. Note that only the **Acrobat 7 Professional** contains a version of Distiller that can create PDF/X-compliant files. The **Standard** and **Elements** versions are not able to create PDF/X files.

QuarkXPress 7

Settings for both printing PostScript and directly exporting PDFs are being developed – Quark are working with the Ghent Web Offset Working Group to create compatible settings. QuarkXPress 7 introduces a host of new and improved features, particularly in regard to soft proofing, preflighting and PDF/X export. The Quark Job Jackets feature in QuarkXPress 7 helps to ensure that a print job adheres to its specifications from the moment it is created, and that it continues to adhere to those specifications all the way to the press. Job Jackets are XML files designed to contain a detailed description of a print job, including layout and output specifications, PDF/X compliancy and other resources such as colour management settings.

Adobe Acrobat 8

The Distiller settings for the new version of Acrobat are being worked on; the new print production tools version 8 introduces will also be documented.

The pass4press website

Preconfigured settings files replicating the guidelines in this brochure will be available at *www.pass4press.com*. The settings should always be double-checked and publication-specific information such as page sizes and colour profiles entered.

Preflighting

Adobe InDesign CS2 features a powerful suite of preflight tools that can spot problems at the document creation phase

Before printing or handing off the document to a service provider, you can perform a quality check on the document. Preflight is the industry-standard term for this process. The preflight utility warns of problems that may prevent a document from imaging as desired, such as missing images or fonts. It also provides helpful information about a document such as the inks it uses, the first page a font appears on, print settings and image resolution and colour space.

The preflight utility in **Adobe InDesign CS 2** (*File>Preflight*) checks content on hidden layers as well. The utility ignores pasteboard items; however, fonts applied to text on the pasteboard are included in the summary. Using the **Summary** panel in the **Preflight** dialog box as a guide to check fonts, links, graphics and other information. An alert icon indicates problem areas. The Summary panel also displays the page number of any transparent object in a document.

To show information for all layers, select **Show Data for Hidden Layers** on the Summary panel. To list only missing or out-of-date fonts, links and RGB graphics, select **Show Problems Only** on either the **Fonts** panel or the **Links and Images** panel. Click **Report** at any time to save the current information on each of the preflight sections in a text file, which you can open in a text editor for reviewing.

Soft proofs

Use the functions built into InDesign and Acrobat to get an accurate view of how your page will look on press

The accuracy of the preview will rely on the monitor being calibrated and the applications being correctly configured – see page 4.

Quark XPress 6.5

In *Quark>Preferences* select the **Quark CMS** pane. At the bottom of the panel you can choose which display simulation to enable **Monitor Colour Space**, **Composite Output Colour Space** or **Separation Output Colour Space**. This will apply the selected profile to the layout.

Adobe InDesign CS2

Choose *View>Proof Setup* to select which profile to use – you can choose from the profile embedded in the document or the application's defaults. These may be the same if you originated the document. Check the *View>Proof Colours* option to dynamically turn on or soft proofing.

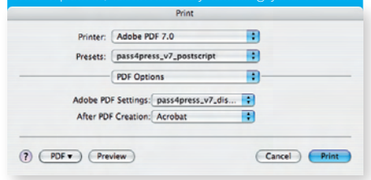
Adobe Acrobat

Acrobat has powerful soft proofing functions for viewing PDFs. Use *Advanced>Output Preview* to preview the PDF using a specified profile. You can also check for **TAC** problems (see **Glossary**, page 19) and colour warnings, plus check individual separations using the Ink Manager. Use *Advanced>Overprint Preview* to show how overprints on objects in the PDF will display when the file is ripped for output.

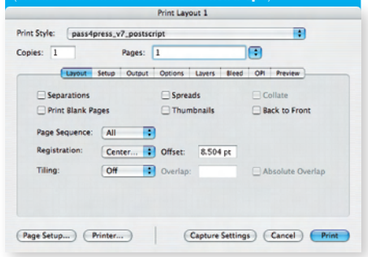
QuarkXPress 6.5 PRINT POSTSCRIPT

Recommended settings for printing a **PostScript** file from **QuarkXPress 6.5**, to be converted to a **PDF/X** using **Distiller 7**. This example was created on **Mac OS X 10.4.8** using **XPress 6.5**

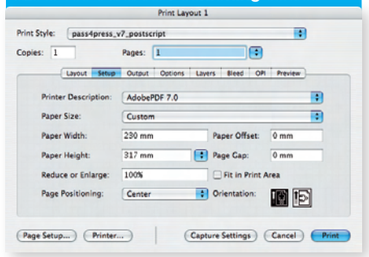
1 Select **File>Print** then **Printer,** and choose **Adobe PDF 7.0**. Use **PDF Options** to directly access Distiller with preset Job Options, automatically distilling your PS file



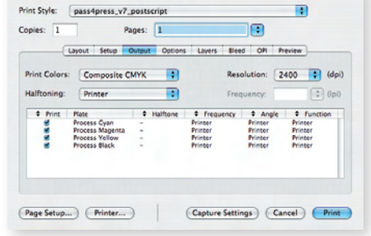
2 Back in **Print Layout** set the **Layout** options as shown. The **Offset** box is in points by default: either enter **9pt** or **3mm** (which will be converted to **8.504pt**)



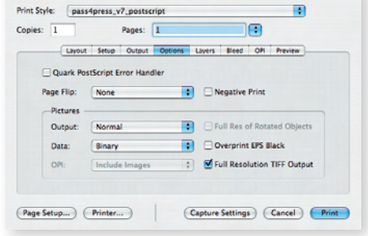
3 Click **Setup**. Set the **Paper Size Width** and **Height** to your publication size plus 20mm to allow for bleed and marks. Ensure the size is 100% and the **Positioning** centred



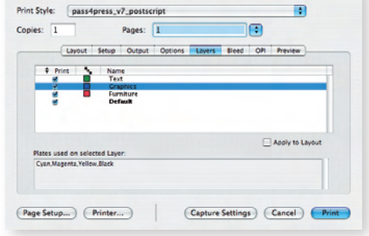
4 **Ouput** lists the colour plates used in the document and will display any rogue **Spot** or **RGB** colours. Make sure **Halftoning** is **Printer** and **Resolution** is **2400dpi**



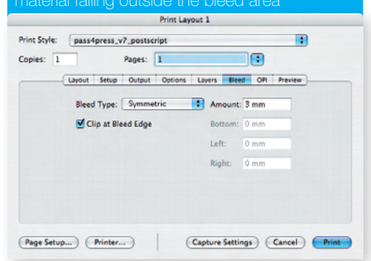
5 In the **Options** tab make sure no **Flip** is applied. set the **Output** to **Normal**, the **Data** to **Binary** and check the **Full Resolution TIFF Output** box



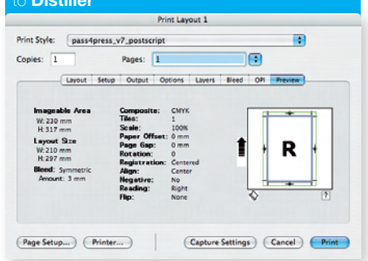
6 **Layers** displays all the object layers present in the document and lists the colour plates used on each individual later. Ensure all required layers are active



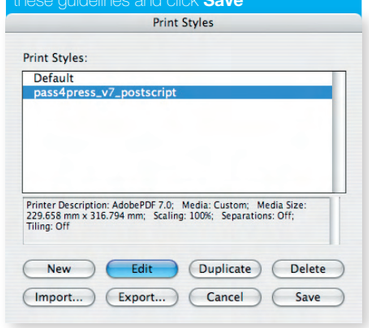
7 Set the **Bleed Type** to **Symmetric** and the amount to **3mm**. Check the **Clip At Bleed Edge** option, which will exclude any material falling outside the bleed area



8 The **Preview** check that the trim, bleed and media boxes are correctly set. Click **Print** to create the **PostScript** file and hand it to **Distiller**



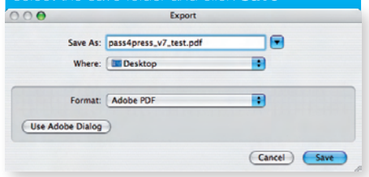
9 You can save most of these settings as a **Print Style**. Open **Edit>Print Styles** and select **New**. Enter the settings as per these guidelines and click **Save**



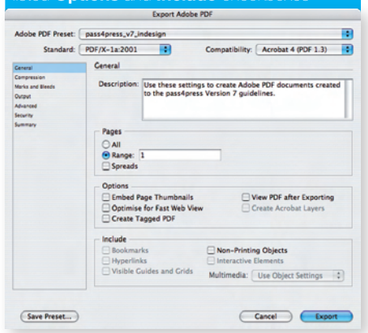
InDesign CS2 EXPORT PDF

Recommended settings for creating a **PDF/X** directly from **Adobe InDesign CS2**.
This example was created on **Mac OS X 10.4.8** using **InDesign 4.0.4**

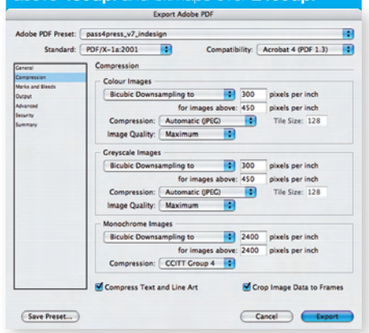
1 Configure your **Flattener Preset** as per page 4. Select **File>Export**, then in **Format** choose **Adobe PDF**. Name the file, select the save folder and click **Save**



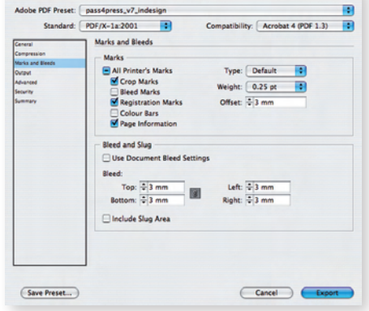
2 In the **General** tab select the single page to print. Set the **Compatibility** to **Acrobat 4 (PDF 1.3)** and deselect all of the listed **Options** and **Include** checkboxes



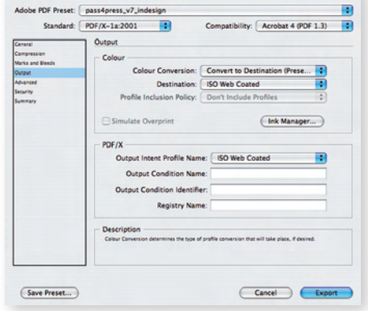
3 In **Compression** set the options for how the PDF will handle placed images. Set **Bicubic Downsampling** for colour images above **450dpi** and bitmaps over **2400dpi**



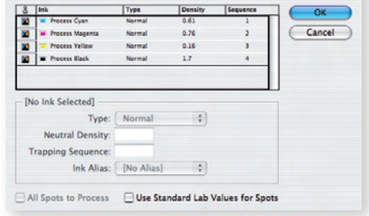
4 The **Marks And Bleeds** tab should be set as below: the indicated **Printer's Marks** should be enabled; the **Offset** set at **3mm** and the **Bleed** set to **3mm** all round



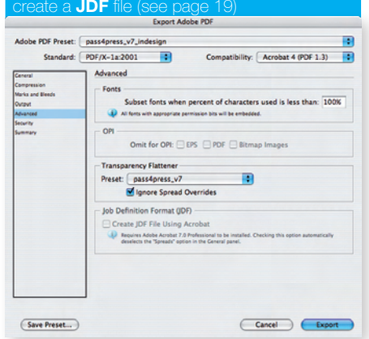
5 **Output** sets colour and **PDF/X** settings. Use the **Destination** and **Output Intent Profile Name** relevant to the publication. ISO Web Coated is used here as an example only



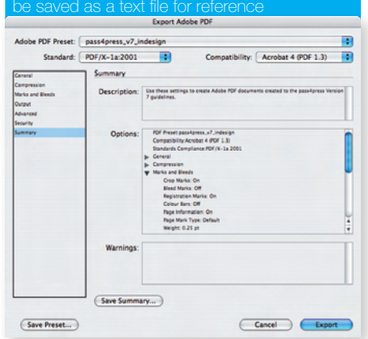
6 Use **Ink Manager** to ensure there are only process inks and no **Spot** colours. **RGB** colours will automatically be converted to CMYK, which may not give the best results



7 In **Advanced** select the **Transparency Flattener** previously created. **OPI** should be disabled. Here is also where you can opt to create a **JDF** file (see page 19)



8 Make sure all the options in **Security** are disabled. The **Summary** tab gives you a list of all the settings that will be applied: it can be saved as a text file for reference

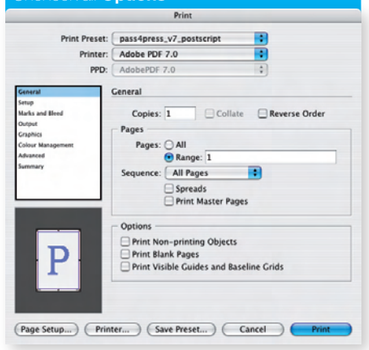


9 Before you click **Export** to save the PDF, select **Save Preset...**: this means these settings can be quickly accessed in future using the **Preset** pop-up menu

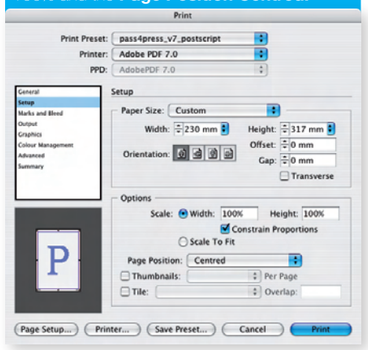
InDesign CS2 PRINT POSTSCRIPT

Recommended settings for printing a **PostScript** file from **Adobe InDesign CS2**, to be converted to a **PDF/X** using **Distiller 7**. This example was created on **Mac OS X 10.4.8** using **InDesign 4.0.4**

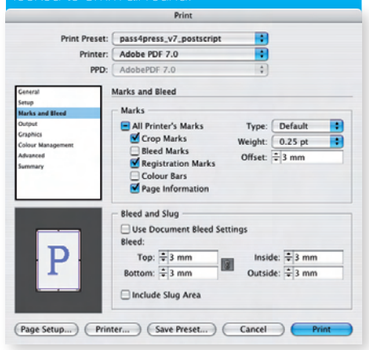
1 Open the **File>Print** menu and from the **Printer** pop-up select **Adobe PDF 7.0**. Select the page number to print in **Pages**. Uncheck all **Options**



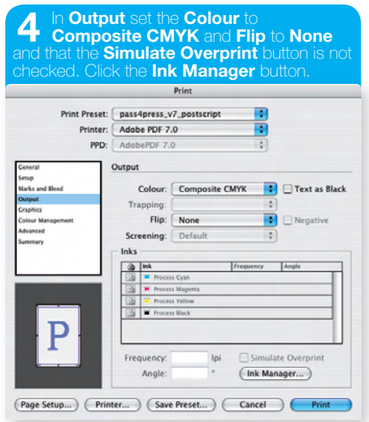
2 Enter your page size plus 20mm in the **Paper Size Width** and **Height** boxes. Check the **Orientation** is portrait, the **Scale** is 100% and the **Page Position Centred.**



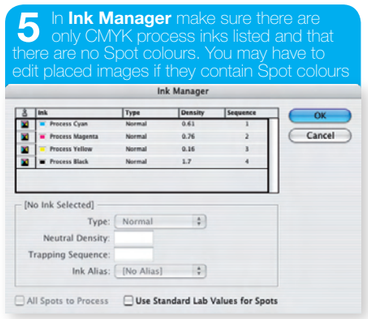
3 The **Marks And Bleeds** tab should be set as below, with the checked **Printer's Marks**, the **Offset** at 3mm and the **Bleed** locked to 3mm all round.



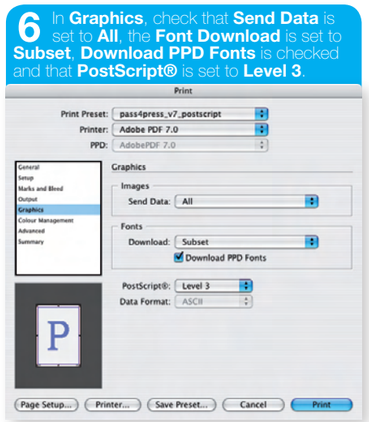
4 In **Output** set the **Colour** to **Composite CMYK** and **Flip** to **None** and that the **Simulate Overprint** button is not checked. Click the **Ink Manager** button.



5 In **Ink Manager** make sure there are only CMYK process inks listed and that there are no Spot colours. You may have to edit placed images if they contain Spot colours

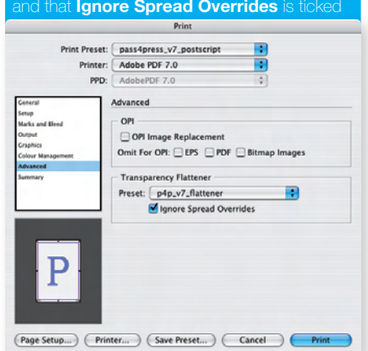


6 In **Graphics**, check that **Send Data** is set to **All**, the **Font Download** is set to **Subset**, **Download PPD Fonts** is checked and that **PostScript®** is set to **Level 3**.

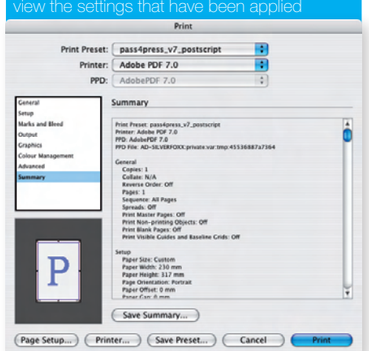


7 **Colour Management** should be on and configured correctly. Choose **PostScript® Printer Determines Colour** in **Colour Handling**

8 In **Advanced** make sure **OPI** is disabled. Select the **Transparency Flattener Preset** previously set as per page 5 and that **Ignore Spread Overrides** is ticked



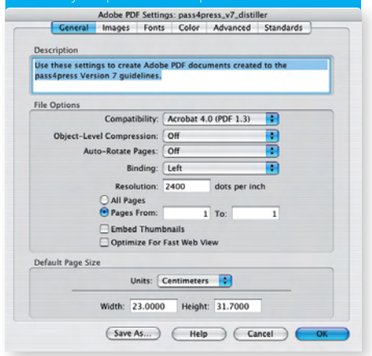
9 Before you click **Print** to save the **PostScript** file, choose **Save Preset...** to store the settings. Use the **Summary** tab to view the settings that have been applied



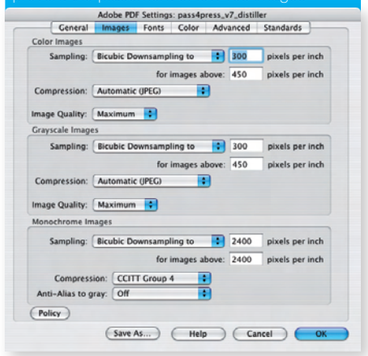
Distiller 7 CREATE PDF/X

Creating a **PDF/X** in **Distiller 7 Professional** from a **PostScript** file printed from **XPress** or **InDesign**.
This example was created on **Mac OS X 10.4.8** using **Distiller 7.0.7**

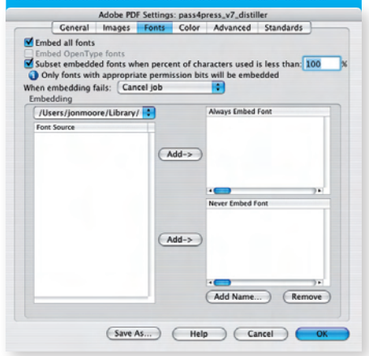
1 In Settings select **Edit Adobe PDF Settings...**. In **General** check the settings as below, change the **Default Page Size** to your publication's plus 20mm



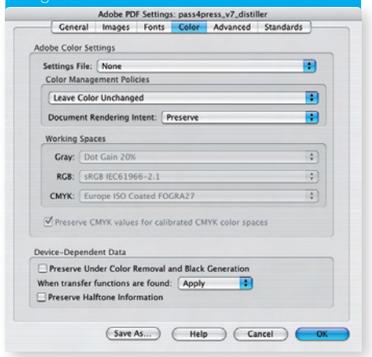
2 In Images set the **Compression** and **Sampling** as shown. The settings will reduce very high resolutions down, but will not prevent the placement of low-res images



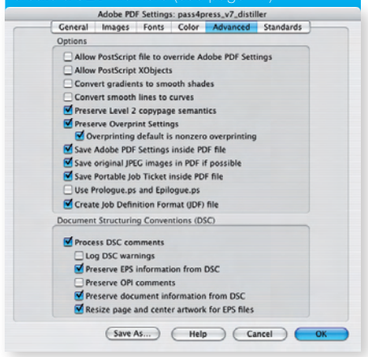
3 The **Fonts** tab is set to embed fonts into the PDF to ensure the correct fonts are rendered. **Subsetting** fonts means only characters used in the document are saved



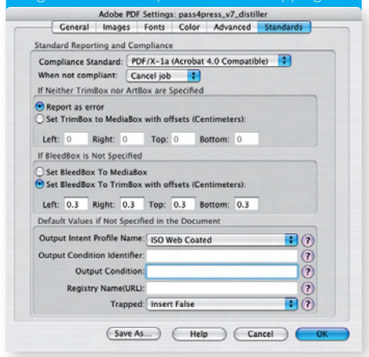
4 The **Color** tab depends on **Distiller**'s **Colour Settings**. If active, all images will be converted to CMYK by Distiller which may not give the best results



5 The **Advanced** setttings are based on **Ghent Workgroup**'s European recommendations. You can also choose to create a **JDF** file here (see page 17)

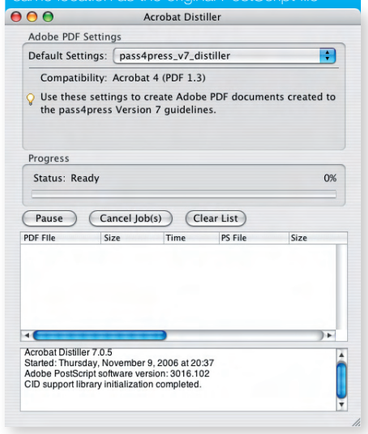


6 **Output Intent** should reflect the printing space. **Trapped** must not be left to **Leave Undefined**. See **Glossary** (page 19, for guidance on Output Intent and Trapping



7 To save the settings you've entered, click **Save As...** at the bottom of the window and enter a relevant name. These settings will also be available at **www.pass4press.com**

8 Drag and drop a **PostScript** file onto the main **Distiller** window – the file will be automatically distilled and saved to the same location as the original PostScript file



Moving forward with PDF/X

The PDF/X standard is now well-established across the publishing industry. Pass4press currently recommends PDF/X-1a, but there are other PDF/X formats also in use and under development

What is PDF/X and Why Is It Important?

PDF/X is a subset of the **Portable Document Format** (PDF) specification that is specifically designed for print submission. It is not just a file format but also an application standard as it defines how applications creating and reading PDF/X files should behave. PDF/X restricts the content in a PDF document that does not directly serve the purpose of high-quality print production output, such as annotations, **Java Actions**, and embedded multimedia. By optimizing the PDF just for print purposes there are likely to be fewer errors. To further reduce errors, a PDF/X file can have embedded fonts and graphics with all elements encoded as either CMYK or Spot. It is also designed to overcome various overprint and trapping issues.

How it PDF/X works

The rendering intent identifies the press condition the file is prepared for, such as type of press and the inks and paper that will be used. If you send PDF/X-1a compliant files, you should never again have to worry about being asked to supply missing fonts or images. You should never again have to be concerned about an image being converted from RGB to CMYK without seeing the results. Decisions about whether or not the printer should trap your file will be based on reliable information. And finally, the printer will know if the file was prepared properly for the press it is going to print on.

PDF/X Types

There are currently two main types of PDF/X in use: **PDF/X-1a** and **PDF/X-3**. Each PDF/X type contains its own set of restrictions as to what is or is not acceptable in a PDF. The PDF/X-3 standard is a superset of PDF/X-1a (a PDF/X-1a file meets all of the requirements of PDF/X-3) and all of the tools designed to read PDF/X-3 are also able to read PDF/X-1a files. A major distinction between the two is that a PDF/X 3 file can also contain non-CMYK colour-managed data.

Why pass4press recommends PDF/X-1a

The Pass4press committee recognizes that the existing PDF/X-1a standard has significant value that will not decrease for a considerable time. Currently and for the foreseeable future the PDF/X-1a standard has the most momentum and acceptance.

The utilisation of PDF/X-1a is another important step in our goal to have files and work within the industry that reduce errors and cost and ultimately speeds up the process. We will continually monitor emerging standards and implement them as soon as it makes sense for everyone concerned.

Future PDF/X Standards

Defining new PDF/X standards is a difficult balancing act of embracing the benefits of earlier standards while adding real value as part of a new standard. In order to avoid confusion, the next PDF/X standards will not be a revision of PDF/X-1a and/or PDF/X-3 but will be known as PDF/X-4 and PDF/X-5 respectively.

They will be a superset of PDF/X-3, in that they will allow the same kinds of usage of device independent colour spaces. They also add the following features based on the current specifications:

- **Transparency**
- **Layers**
- **Embedding OpenType fonts**
- **16-bit images**
- **External links to fonts, ICC profiles and XObjects**

The PDF/X-4 and PDF/X-5 standards specifications are likely to be published and approved in 2007.

The Five Flavours of PDF/X

Reference:	PDF/X-1a	PDF/X-2	PDF/X-3	PDF/X-4 PDF/X-5
Description:	*Based on PDF 1.3*	*Superset of PDF/X-3*	*Superset of PDF/X-1a*	*Based on PDF 1.6*
Features:	• CMYK-only blind exchange • RGB prohibited • Can contain spot colours, grey, deviceN, patterns • No live transparency • Fonts embedded	• Open exchange • OPI-like workflow: allows for linked or external files; proxy images for 'thin' PDF	• Allows colour managed data • ICC-profiled RGB, CalRGB, LAB files • Like PDF/ X-1a no restriction on image resolution	• In development • Will allow layers and transparency • OpenType font embedding • Use of 16-bit images • External links to profiles

Proofing & proof4press

The wide-ranging implications of moving to ISO standards has required a major change in the philosophy behind PPA's proof4press accreditation scheme. Recognising the global reach of modern publishing workflows, a new process is due to be launched

PPA launched **proof4press** with the aim of creating a proofing standard that minimized the compromises that printers often had to make when matching editorial and advertising images. 10 solutions were accredited in the first 18 months. During this same period there are has been an increased number of proofs supplied from international agencies and also UK jobs printed abroad, which has led to the general move towards adherence to ISO standards.

PPA's **pass4press version 7** and **pic4press version 2** brochures recommended using the **FOGRA 27L** and **28L** characterisation data and the ECI-produced profiles (**ISO Coated** and **ISO Web Coated** respectively) in conjunction with the relevant **FOGRA** media wedges for verification purposes. However, because of ISO Coated's high TAC the Pass4press committee did not feel that there was an existing profile in line with the **ISO 12647-2** standard that was acceptable for the high quality, glossy end of the magazine market. This led to an incongruous situation of recommending ISO profiles for PDF creation and digital image processing at odds with the proofing accreditation process. After much discussion, we have decided to officially suspend the accreditation process until we have a holistic approach to the process, backed up by a complete set of ISO-derived separation profiles. Thankfully we will shortly be able to announce a new set of recommendations to gaining accreditation (see page 13), produced in tandem with groups such as **TC130** and the **Web Offset Working Group** and following internationally-recognised processes. We are working hard with these groups to produce a new suite of profiles in the short term. Check *www.pass4press.com* for details. The new iteration of proof4press will cover:

- **Measurement and tolerances**
- **Vendors with current accreditation**
- **Accrediting future vendors**

We can continue to recommend solutions which have already gained proof4press accreditation, as their devices have demonstrated the ability to output consistent, accurate proofs to a specific profile, even though the specific target profile will in effect change. There are a number of companies which have been awaiting clarification of the proof4press process. We thank those companies for their patience and will ensure that they are informed of the new approval process as soon as it is confirmed.

Flightchecking

The following are required in order for a PDF file to be considered a valid pass4press version 6 file. This list details the main issues, but is not exhaustive. Ready-made settings for the major preflight applications are already available on the Ghent Workgroup site, www.gwg.org – navigate to the Magazine Ads specification page

FLIGHTCHECK PREREQUISITES	FLIGHTCHECK WARNINGS
The following are required in order for a PDF file to be considered a valid pass4press version 6 file:	*The following are not recommended in PDF files and should generate a warning in preflight:*
• A PDF file shall be compliant to the ISO PDF/X-1a:2001 standard as defined by ISO 15930-1. • A PDF file shall not be created with the Adobe PDFWriter product. • A PDF file must either have no crop box defined or have a crop box set to the same size as the Media Box. • No object in a PDF file shall be transparent. • A PDF file shall not use Multiple Master fonts or Multiple Master instances. • Embedded composite fonts which are not sub-set shall not be used in a PDF file. • A PDF file shall not contain white text set to overprint. • Images using 16 bits per sample shall not be used in PDF files. • PDF files shall not use layers. • A PDF file shall not contain annotations that are set to print. • The number of pages in a PDF file shall be exactly one. • Total area of coverage (TAC) of elements on a page should not exceed 310 per cent. • Resolution of colour and greyscale images shall not be below 150 dpi. • Resolution of 1-bit images (either regular images or image masks) shall not be below 550 dpi. • 1-bit images shall not use JBIG compression. • Images shall not use JPEG2000 compression.	• A PDF file should not contain objects that are completely off the page (as defined by the MediaBox). • A PDF file should not contain custom UCR functions for objects in any colour space. • A PDF file should not contain custom BG functions for objects in any colour space. • A PDF file should not use black text smaller than 12 points that is set to knockout. • A PDF file should not contain text that is smaller than 5 points or text that is smaller than 9 points and coloured with more then 2 colour separations. • Resolution of colour and greyscale images should not be above 450 dpi. • Resolution of 1-bit images (either regular images or image masks) should not be above 3600 dpi.

RIP standards

Just as the PDF format continues to evolve, so RIPs are constantly being improved to handle all the new functionality. The improved features bring fresh output challenges, however, but there are comprehensive solutions available to help

Process Control

The standardisation of devices that render PDF files has improved significantly in the last few years. Much of this can be attributed to the widespread use of the **PDF/X** standards – PDF/X has clearly defined the proper behaviour of PDF processing applications. The wide distribution of various RIP standardisation test forms means that the tools are now readily available for manufacturers of equipment to test their products. This has meant that in the last few years most products being released comply with the RIP specifications as defined by PDF/X.

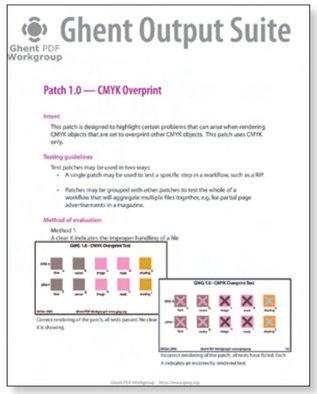
There are several areas where things can go wrong when handling PDF files. Most users who handle PDF files often have steps between the creation and final rendering of the document. For example, if a printer receives a file there is a good chance that the document will be proofed, either as a hard copy proof or on a monitor. How can you be sure that what is viewed on the screen will be the same as what comes out of the hard copy proofing device, or the RIP connected to a press or CTP device? It is also likely that the supplied PDF files will be amalgamated using another application in order to be imposed for printing. How can the operator be sure that this process does not damage or change the intent of the original document? Fortunately there are test suites designed to test these specific issues.

The Altona Test Suite

Product and application developers should use the **Altona Test Suite** as developed by **BVDM**, **FOGRA**, **UGRA** and **ECI** for testing the proper handling of PDF files. The Altona Test Suite is a large and comprehensive suite, although it may be too advanced for average users. Visit *www.altonatestsuite.com* for details.

Ghent Output Suite

The **Ghent Output Suite** is developed by the **Ghent PDF workgroup**, and is a comprehensive suite designed specifically for testing workflows. It is ideal for testing how your working practices are handling PDF files. The suite is a series of easy-to-use patches which can be processed through your normal workflow system to see if PDF files are being handled correctly. Go to *www.gwg.org* for more information.



International rescue

The UK is not alone in striving for consistent standards, and the adoption of ISO guidelines presents a plethora of organisations qualified to provide help and services

Proofer Certification

The UK is not the only country to focus on tackling the proofing issue, and similar schemes to proof4press soon followed in Australia (**3DAP**) and France (**SICOGIF**). Although all schemes were slightly different, they all had the same goal of improving on current certification tolerances and adding a visual checking procedure which was carried out by a committee subgroup. This was always the most controversial aspect of the accreditation process, but at the time was considered essential as there were still several proofing technologies on the market that produced a 'grainy' proof, or displayed imaging artifacts or anomalies. Things have of course moved on and the relevance of the visual check has become less significant with the latest generation of proofing systems. This of course means that switching to a professional proofer certification organisation is now a real possibility and one that the Pass4press committee is keen to pursue.

International Certification Organisations

SWOP and **FOGRA** are probably the two most widely know organisations to offer proofer certification so were the main candidates when deciding on a suitable alternative. Both organisations are working closely with ISO on **12647-7**, the latest revision to the standard, covering 'off press proofing from digital data'. This should be ready for release in Q4 2007 and will raise the bar yet again in terms of **Delta E** tolerances etc.

While not identical to the proof4press accreditation process, the significance of FOGRA's certification is already recognised by all parties and indeed most of the proof4press approved devices are already FOGRA certified.

FOGRA certification

FOGRA (Graphic Technology Research Association) is a well established body whose aim is to promote print engineering and it's technologies in the fields of research, development and application and to enable the printing industry to utilise the results. With about 50 staff and 600 members, FOGRA runs several certification programs for all areas of the print industry including digital proofing. FOGRA-certification encompasses elaborate measurement and test procedures according to the stringent 'FOGRA-cert' criteria.

Tests are carried out in the following categories:

- **Colour to ISO 12647-2**
- **Colour Drift (fading)**
- **Repeatability/Consistency**
- **Reproducibility**
- **Substrate Gloss**

For more information please visit *www.fogra.org*.

Proofing tolerances

The industry's move towards using international standards requires a new proofing verification method and a re-evaluation of how to measure those proofs. Work is on-going to provide clear guidance in this crucial area

PPA's decision to adopt internationally recognised standards for colour proofing has raised the issue of what tolerances are acceptable for colour proofs. International standards for the printing industry are created through worldwide consensus at meetings of the **ISO TC130** committee representing many countries worldwide. In the UK, input to this committee is provided through **British Standards** via the **Technical Advisory Group (PAI/43-UK-TC130-TAG**). TAG consists of a number of industry experts including representatives from PPA.

For high quality, glossy publications, PPA will adopt the colour space described in **ISO 12647-2**, and characterised by the **FOGRA 27L** data set, (soon to be replaced by the **FOGRA 39** data set). This data was measured from printed sheets produced under controlled conditions, and experience has shown that the data is typical of press conditions. So by using real press data as aim-points for colour proofing, colour is easier to match on press than using proofs made to aim-point values established from pre-press proofing systems. Using this data as the aim-points for proofing should therefore result in less compromise on the press when trying to achieve a colour match. Colour tolerances are usually expressed in terms of **Delta E**, where a value of 1 is described as just visually noticeable. The suspended PPA proofing accreditation process required proofs to be maintained within an average tolerance of **Delta E** of 2 across the measured patches, in tandem with visual referencing. This was considered practical for implementation as long the proofing materials and the instrumentation did not change. Absolute values of the colour aim values were not reliable as there are visually observable differences between proofs made to the same measured values. The reasons for this include differences in UV content of the proofing media, differences in spectral properties between the proofed reference colour patches (metamerism) and inter-instrument disagreement.

To allow for the possible variations described in the paragraph above, FOGRA suggest colour tolerance values far larger than those previously acceptable by PPA. Bringing these to more acceptable values will require proof providers and receivers to locally agree acceptable tolerances by discussion and negotiation. Proofs from systems previously accredited by PPA should be used to establish specific local aim values and acceptable tolerances. Any locally agreed values should also fall within the ISO and FOGRA tolerances.

Paper types

The paper you print on at the end of the process is critical in dictating how a job is created at its inception. Key international bodies are working to ensure harmony between paper, proof and print

Before commencing the production of any magazine it is crucial that the paper to be printed on is considered. Only after identifying the paper type can instructions be given to photographers, designers, repro and proofing suppliers with any degree of confidence. It follows that the paper used to produce proofs reflects the paper on which the final pages will be printed. Proofs on a glossy bright substrate but printed on an uncoated paper will always set expectation levels unrealistically high.

At present the ISO 12647 print standard groups papers into four categories: paper types 1 and 2; 3, 4 and 5 (see table). For each ISO paper type a characterisation data set has been produced by FOGRA which describes the results obtainable from that paper when printed within the ISO 12647 standards. The characterisation data can be obtained from *www.fogra.org*.

From the FOGRA characterisation data sets, the ECI (European Colour Initiative) has produced ICC profiles, which are widely recognised and increasingly used within the industry. A suite containing the profiles is available at http://www.eci.org/eci/en/. Classifying papers into manageable categories is an ongoing task as new papers are constantly being developed. There are initiatives from industry bodies (under the ICC/ISO TC130 banner) to enlarge and refine the categories of papers.

The increasing use of optical brighteners is another challenge for the industry, as accurate readings with the instruments presently in use are difficult to achieve. The ECI's Web Offset Working Group is working to produce new profiles, and one for **SC** (Super Calendered) papers is due for release in the near future, with more to follow.

While there are more developments to come, the existing paper types (characterisations and profiles) are an important step in standardising the process. They are recognised internationally and have proved able to produce accurate, predictable results.

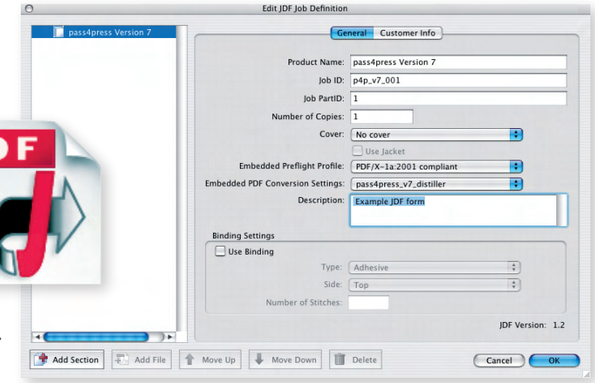
Paper Types	ECI Profile
Paper Types 1 and 2 *gloss- and matte-coated* FOGRA27L	ISOcoated.icc
Paper Type 3 *gloss coated web (LWC)* FOGRA28L	ISOwebcoated.icc
Paper Type 4 *uncoated white* FOGRA29L	ISOuncoated.icc
Paper type 5 *uncoated slightly yellowish* FOGRA30L	ISOuncoatedyellowish.icc

Metadata at work

Metadata is becoming increasingly important, as most modern workflows are driven by descriptive text embedded in files using metadata schemas such as JDF

Metadata standards

Metadata is text that can embedded within a digital file, and can be either descriptive or relevant to an automated workflow application. There are a number of different schemas (ie, field mappings) in use, most of which overlap to some extent. One of the first schemas to be adopted internationally was **IPTC**. The **International Press and Telecommunications Council** was established in 1965 to promote technical methods for exchanging information. Over the last decade, the standard **IPTC** captioning fields have become the de facto way used to provide consistent descriptive information for the news industry, with the IPTC maintaining a list of field definitions covering headlines, bylines and copyright information.



• Example of the JDF Job Definition form in Adobe Acrobat Professional 7

XMP

The Extensible Metadata Platform (**XMP**) has been developed by **Adobe** as an advanced way of embedding metadata in files. XMP builds upon the basic IPTC fields but also allows more complex descriptions to be recorded, taking advantage of other metadata systems. Many files have metadata already embedded: for example, a digital camera will attach **EXIF** information such as height, width, camera model and the date and time taken to an image, and this will be picked up automatically in XMP. This can be viewed by going to **File>File Info** in **Adobe Photoshop**. From this dialogue box, further information can be added, such as a description of the image, any keywords used to search for the file and copyright notices. This data will travel with the file wherever it goes, and can be used to search for or sort the file later. For more info: **www.iptc.org** and **www.adobe.com/products/xmp**

JDF

Job Definition Format (JDF) is the print industry's most highly anticipated standard since **Portable Document Format** (PDF). JDF is a metadata-style system, which uses an **XML**-format (**Extensible Markup Language**) job ticket to link and refer files to multiple production devices. Using JDF, one can describe the intent of a printed piece, as well as each process step required to achieve that intent. Think of it as a smart, self-directed electronic job bag that holds not only the job content, but also instructions to interact with other JDF-enabled devices, automatically routing the job through each workflow step – from creation to final print production – yielding greater automation, speed, cost efficiency, and ease-of-use. The JDF file can contain PDF job options for PDF creation and an Acrobat preflight profile – against which added files will be checked on submission. JDF was initiated by **Adobe**, **Agfa**, **Heidelberg** and **MAN Roland** in 1999 but has been handed over to the open standards body **CIP4**. Initially JDF focussed on sheet-fed offset and digital print workflow, but it has grown to include many other printing styles, and is also finding its way back up the creative chain.

You can currently create JDF-compliant files simply by checking a box during the PDF creation process: either within **Adobe InDesign CS2** when exporting a PDF (see page X, Step X) or when distilling a **PostScript** file using **Adobe Distiller 7 Professional** (see page X, step X). You can use **Acrobat 7** to edit the job ticket, as per the example above. Check with your pre-press suppliers and printers to see how JDF might benefit your company. For more information, visit: *www.adobe.com/products/jdf* or *www.cip4.org*.

Ghent Workgroup XMP panels

There is a strong need for stakeholders to get more information about the files they exchange, especially in the advertising segment. By promoting the standard that is already compatible with **AdsML**, the **Ghent PDF Workgroup** expects a quick adoption of best practice specifications. The **GWG Ad Ticket** was successfully developed with active collaboration and technical support from GWG member **Medibel+**, the organization that unites the Belgian advertising sector. The GWG Ad Ticket is an extension of the existing Medibel+ Ad ticket, conforming 100 per cent with Medibel+ ad content.

The **GWG Job Ticket Subcommittee** investigates and defines best practices regarding different forms of job tickets. In addition to the implementation of the first Ad Ticket, the group will focus on future implementations of XMP and JDF. The GWG Ad Ticket is an Adobe Acrobat custom XMP panel that attaches to a PDF file and is designed to provide comprehensive meta data about the ad represented by the PDF. Using the GWG Ad Ticket, detailed and useful information such as media agency (buyer name); creative agency; prepress name and contact information including phone/email; advertiser name; first publication date as well as production information (publication; colour description, size, width, bleed and correction remarks) all follow a PDF ad from creation through production.

Each GWG Ad Ticket includes 13 required and nine optional fields that are compatible with AdsML, the initiative supported by **IFRA**, an international association for media publishing, the **Newspaper Association of America** (NAA) and **IDEAlliance**, a leader in XML-based standards development for the graphic communications industry. GWG Ad Tickets share the same tags as AdsML. Similarly, the group will continue to maintain close contact regarding developments within standards organizations and develop compatible solutions. The panels can be found at *www.gwg.org along* with more information on their usage.

pic4press update

2006 has seen major advances in digital camera technology and software, and with a major release of ISO-derived profiles on the horizon PPA will be launching version 3 of the pic4press initiative in early 2007

Version 2 of PPA's **pic4press** initiative was launched at last year's **PPA Production Conference**, building on the first version of pic4press' recommendations for best practice guidelines on commissioning, supplying and receiving digital images.

There are large variations in paper types and printing conditions not just in the UK but globally, so it is unwise to recommend a single separation or proofing profile (see **Proofing and tolerances**, page 14), but PPA felt that providing at least basic profile guidance for specific conditions would benefit the industry. Although the recommendation was to use the **FOGRA 27L** and **28L** characterisation data (see **Paper Types**, page 14), the high TAC value in 27L (340 per cent) compared to typical UK printing conditions meant that there was a perceived gap in the available suite of ECI profiles in regard to glossy, high quality magazines. Therefore, pic4press Version 2 announced that a profile was being developed, **ppacoatednov05.icc**. However, after discussions with various industry bodies it was decided not to release the profile, for two main reasons. The characterisation data used was derived from the proof4press initiative, which was not directly linked to the **ISO 12647-2** international printing standard (for more details see **Proofing & proof4press**, page 12). There is also a new version of ISO 12647-2 characterisation data being developed, **FOGRA 39**, which in tandem with profiles being worked on by ECI are likely to provide an even better result for web offset magazine requirements.

The release of the new suite of profiles is due around the end of 2006, so it has been decided to release an updated version of pic4press once the industry has been able to assimilate the new profiles. Look out for version 3 of pic4press in early 2007, which will also contain updated guidelines and explanations.

Metadata Cross-reference

PPA/BAPLA panel	Photoshop 8/9	Photoshop 7	Photoshop 6	IPTC
Key fields				
Image Reference	**Document Title**	**Title**	**Object name**	**Title**
IPTC definition	*A shorthand reference for the image or photograph – primarily for identification*			
Description	**Description**	**Caption**	**Caption**	**Description**
IPTC definition	*Used to describe the who, what and why of what is happening in the photograph*			
Credit	**Credit**	**Credit**	**Credit**	**Provider**
IPTC definition	Used to identify who is providing the photograph.			
Licensing Info				
Licensing Contact	**Copyright info URL**	**Owner URL**	**Image URL**	-
IPTC definition	*N/A*			
Creator	**Author**	**Author**	**Byline**	**Creator**
IPTC definition	*The name of the person who created the photograph*			
Copyright Status	**Copyright status**	**Copyright status**	**Mark as copyright**	**N/A**
IPTC definition	*N/A*			
Date Created	**Date Created**	**Date Created**	**Date Created**	**Date Created**
IPTC definition	*The date of when the photograph was taken, not the date when you scanned or edited the image.*			
Copyright Notice	**Copyright Notice**	**Copyright Notice**	**Copyright Notice**	**Copyright Notice**
IPTC definition	*Copyright notice for claiming the intellectual property, should identify the current owner(s) of the copyright for the photograph*			
Rights + Restrictions	**Instructions**	**Instructions**	**Special Instructions**	**Instructions**
IPTC definition	*Text field that can be used to include any of a number of instructions from the provider to the receiver of the photograph*			
Job Reference Info				
Headline	**Headline**	**Headline**	**Headline**	**Headline**
IPTC definition	*A brief publishable synopsis/summary of the contents of the photograph. Not to be confused with Title*			
Job Reference	**Transmission Reference**	**Transmission Reference**	**Original Transmission Ref**	**Job Identifier**
IPTC definition	*A number or identifier created or issued for the purpose of improving workflow handling and image tracking.*			

pic4press/BAPLA template

Metadata can be intimidating at first glance, so a joint venture between the British Association Of Picture Libraries and Agencies and PPA have created a new Photoshop-compatible XMP panel. Use this to ensure you capture core information when exchanging and managing digital files

What is metadata?

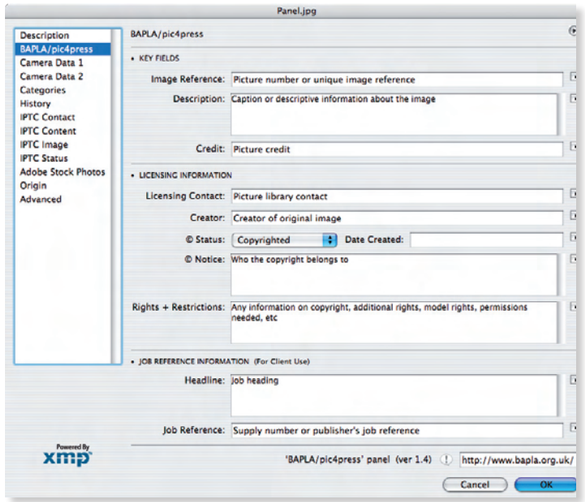
Metadata is information about a digital file. It is currently carried in the image file as **XML** data, which can be read by **Adobe Photoshop** and other XML compliant software.

Where can you view metadata?

Metadata can be viewed under *File>File Info* on various panels in Photoshop, depending on the version you are running. In Photoshop 8 and 9, metadata can be viewed on **Origin** and **Description** panels, and in Photoshop 9 the **IPTC** panels are also visible in the default version.

pic4press/BAPLA initiative

Pic4press and **BAPLA** have identified a set of key fields for the transaction between image supplier and publisher. The aim is to standardise the way fields are used, to protect copyright and other critical information, and to enable publishers to use metadata more effectively. We have created a panel (for use in Photoshop 8 and newer) which allows people to view the recommended fields in one place, and encourages them to work in a standard way.



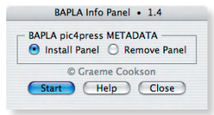
• The BAPLA/pic4press XMP panel as it appears in Photoshop

The recommended fields

The fields map directly from the Origin and Description panels, and in most cases also from the IPTC panels. IPTC field definitions have been used where possible, and we have given plain English names to our fields for ease of use. Data entered will appear on other Photoshop panels; conversely the BAPLA /pic4press panel will display data entered in other panels. Use of the panel should not be restrictive; you may need to use other fields as well. The aim is to provide a simple user interface for information which most suppliers and publishers need.

Downloading and installing the panel

The panel is a **JavaScript** for Photoshop. It will be available for download from the pic4press and BAPLA sites (*www.bapla.org*) and easily loaded into Photoshop (Versions 8 and up). People using other versions of Photoshop should consult the table opposite and add data to the appropriate fields. The table cross-references the fields used in the BAPLA/pic4press panel to Photoshop and IPTC fields and also lists the relevant IPTC description.



• BAPLA/pic4press XMP panel installation script

To install the panel, select *File>Scripts>Browse* in Photoshop. Check the **Install Panel** button and click **Start** to automatically install the panel to the correct location. There's also a **Remove Panel** option accesible in the same file.

Section One: KEY FIELDS

Image Reference

Picture number or unique image reference. Can be supplier's filename, which will not be overwritten here by publishers' workflow systems.

Description

Caption or descriptive information about the image.

Credit

Credit line as it should appear in use.

Section Two: LICENSING INFORMATION

Licensing Contact

URL or other contact details for licensor of the image.

Creator

Creator of the original image.

Copyright Status

Pop-up box with preset options:

- Copyrighted
- Unknown
- Public domain

A © symbol appears in the filename of the image's title bar when 'copyrighted' is selected

Date Created

The date the image was created (not the scanning date).

Copyright Notice

Description of ownership or copyright.

Rights and Restrictions

List of usage rights and restrictions, model release terms, permissions required, etc.

Section Three: JOB REFERENCE INFORMATION (Client use)

Headline

Publisher's text reference or story name.

Job Reference

Supply number or publisher's job reference.

*With thanks to **Sarah Saunders** and **Graeme Cookson** of **Electric Lane**. For more information on metadata and its use contact: metadata@bapla.org*

Glossary of terms

A reference for common terms used in the pass4press Version 7 brochure and across the print production workflow

Bleed Any image that extends beyond the trim edge of the page.

CMYK An abbreviation for **cyan**, **magenta**, **yellow** and **black** (or key): the four colours that make up the subtractive **CMYK** colour space. Also known as Process colours. Developed for printing, which works with reflected light, each colour is the opposite of its **RGB** equivalent in the visible spectrum: cyan is opposed to **red**, magenta to **green**, yellow to **blue**. CMY inks control the amount of RGB light that is reflected from white paper: black is added as the CMY colours alone cannot create a solid black.

Colour Bar A control strip printed on the edge of a press sheet for visual and densitometry checking of ink colour and density. It consists of small blocks of colour, graded halftone tints and overprints.

Colour management A process used to ensure colour consistency across different input and output devices so that printed results match originals.

Compression The reduction in size of a digital file, which can be lossy or loss-less. Lossy formats (such as **JPEG**) permanently discard data – when the file is expanded the remaining data is used to rebuild the missing data, which produce a noticeable quality drop.

Contrast The tonal gradations between the highlights, middletones and shadows in an image and also the relationship between the lightest and the darkest areas of an image.

Crop Marks Marks along the margins of an illustration, used to indicate the portion of the illustration to be reproduced.

CTP Computer-to-plate: a system which exposes plates by laser or thermal imaging techniques directly from data supplied from a computer file.

Delta E In the printing industry **Delta E** denotes the tolerance of proofs in relation to an ideal 100 per cent accuracy baseline. Delta E is calculated by using a colour measuring device such as a colorimeter to examine solid reference patches printed on a proof alongside the actual image.

Densitometer In printing, a reflection instrument used to measure the density and consistency of colour throughout the run.

Density Refers to the amount of colour that is subtracted from the paper by an ink.

Dot Gain See **TVI**.

Downsampling The reduction in resolution of an image to match a printing device's resolution, whilst retaining sizing and positioning information.

DPI/PPI Dots per inch/pixels per inch. Measurements used to determine the resolution of printing images and text. This is determined from the original pixel dimensions.

EPS **Encapsulated PostScript**. The **EPS** file format can contain both vector and bitmap graphics and is widely supported by most graphic applications. EPS files are often used as an intermediate way of transferring graphic elements from one application to another.

Font A set of consistent size, shape or style of printer characters, including alphabetic and numeric characters and other signs and symbols.

Grain In paper, the machine direction in papermaking along which the majority of fibres are aligned. Some paper properties, such as increased size and better folding qualities change with relative humidity across the grain.

Grey Scale Control In some print process methods this is used to control the colour on the press by monitoring amounts of CMY overprints which produce a 'neutral grey'.

Gutter Margin
In binding, the blank space where two pages meet; the inside margin at the binding edge; also called Back Margin or Bind Margin.

Halftone Screen A pattern of dots of different sizes used to simulate a continuous-tone image.

Hue (1) In colour, the main attribute of a colour, which distinguishes it from other colours. (2) The wavelength of light of a colour in its purest state (without the addition of white or black).

ISO **International Standards Organization**.

Imposition The plan for the assembly of pages in a press form so that they will be in the right sequence after the printed sheet is folded.

JPEG **Joint Photographic Experts Group** – the international standards body that has defined compression standards. A **JPEG** trades image quality for file size. See **pic4press Version 2** for details (*www.pass4press.com*).

LPI **Lines per inch**. A measurement for the number of lines per inch in the halftone grid.

Margins The white space around the printed matter on a page.

Metamerism Phenomenon by which colour samples with different spectra appear to match under a particular type of illuminant, although under other illuminants they show a colour mismatch. (definiton courtesy *www.heidelberg.com/*)

Middle Tone The tonal range between highlights and shadows of a halftone or reproduction.

Opacity The property of paper, which minimizes show through of the printed image from the opposite side of the sheet, or the sheet under it.

Out of Register (1) Descriptive of pages on both sides of the sheet which do not back up accurately. (2) Two or more colours not exactly aligned when printed.

OPI **Open Pre-press Interface**. A system in which low-resolution images are automatically replaced with high-resolution images on output. **OPI** comments are not acceptable within pass4press compliant PDF files.

Output Intent The **PDF/X** standard requires that all CYMK data be identified for a target printing condition using an **Output Intent**. For printing conditions included in the ICC registry, this may be conveyed by a pointer to the printing characterisation data (**Output Condition Identifier**). For other conditions a full output profile is required as the value of the **DestOutputProfile** key. If you are not sure which colour space you should use, talk to your printer or publisher. In the absence of any information, you could use one of **ECI**'s **ISO** profiles. See the **pic4press version 2** brochure or ECI's website for more information – *www.eci.org*.

Overprint The printing of one colour over another without knocking out the colour beneath, meaning colours merge.

PDF **Adobe® Portable Document Format** is the open de facto standard for electronic document distribution worldwide. Adobe PDF is a universal file format that preserves all the fonts, formatting, graphics, and colour of any source document, regardless of the application and platform used to create it.

PostScript A language defined by **Adobe Systems, Inc**. for describing how to create an image on a page. The description is independent of the resolution of the device that will actually create the image.

Press dot gain The amount by which a halftone dot increases between the printing plate and printed sheets. This occurs when ink is absorbed by paper and is an inevitable part of the printing process – therefore it must be compensated for when scanning and be represented on the proof.

Register Marks Small crosses, guides or patterns added to a page, used as a guide for correct alignment.

RGB (Red, Green, Blue) The additive primary colours which are used in video monitors, as opposed to the subtractive primaries (yellow, magenta, cyan, and black), which are used in four-colour printing.

RIP **Raster Image Processor**. A software program or computer that interprets digital data (for instance, **PostScript**) and determines what value each individual pixel of a final output page bitmap should have. The interpretation of vector data into rasterised information.

Saturation A measure of the amount of grey in a colour. The higher the grey content, the lower the saturation.

Show Through Printing that is visible from the back side of a sheet, or the next sheet, under normal lighting conditions.

Soft Proof Refers to proofing from a monitor, for colour accuracy the monitor or screen should be calibrated and colour managed (see page 6).

Solid An area completely covered with ink or the use of 100 per cent of a given colour.

Spectrophotometer A device that captures colours as spectral data, thereby providing maximum accuracy in measuring and specifying colours.

Spot Colour Colour printed with customised ink outside the four process colours of cyan, magenta, yellow and black, such as metallics or fluorescents. Spot colours are not currently acceptable within **PDF/X**s.

Stochastic Screening An alternative to conventional screening that separates an image into very fine randomly placed microdots, rather than a grid of geometrically aligned halftone cells.

TAC **Total Area Coverage** refers to the maximum amount of ink – expressed in the cumulative sum of dot percentages – of all the colours being printed in one area. For example, CMYK has a maximum of 400 per cent ink – 100 per cent of each colour. In Offset printing it is not desirable to print 400 per cent of ink in one area as this can cause problems ranging from inconsistent results to ink drying problems. The recommended amount of TAC is dependant on many variables including paper type and printing process; pass4press recommends 310 per cent maximum for the printing of magazines on heatset web offset printing on good quality coated paper, but stresses that in all cases one should verify with the printer or publisher for the recommended TAC.

TIFF **Tagged Image File Format**. The traditional rasterised bitmap file format for high-quality, print-usage image files, photographic in nature, which can theoretically be any resolution or colour space. TIFFs are typically used in print at 300dpi at 100 per cent of their placed size. TIFFs can lose quality if enlarged.

Tonal Value Increase (TVI) The expression Dot Gain is being increasingly replaced by the term Tonal Value Increase or TVI. This is thought to represent a better description of proofing systems that do not create halftones – ie, all of those accredited by PPA. TVI expresses the per cent increase in the apparent darkness of an image in the mid-tone range during the production run. For example, with a 15 per cent dot gain, a 55 per cent halftone will increase to 70 percent. This increase is compensated for in reproduction by making the image lighter in separations. (**http://www.heidelberg.com/wwwbinaries/bin/files/dotcom/en/glossary.pdf**).

Transfer Functions Instructions to change the colour gradation of an image. They have traditionally been used to compensate for dot gain in output devices or for the creation of special effects. Transfer functions are rarely used today. The pass4press specification forbids the use of transfer functions within PDF files. It recommends that these effects are applied during the creation of a PDF file.

Trap An area of overlapping ink where two different colours of ink meet, used to prevent an unwanted white edge between the colours.

Trapping The ability of an already printed ink film to accept a succeeding or overprinted ink film – an operation that allows for variations in registration during printing.

Trim Marks Marks placed on original copy to indicate trim size; also called Corner Marks.

UCR/GCR **Under-Colour Removal/Grey Component Replacement**. **UCR** replaces the grey component of neutral colours with black ink, whereas **GCR** replaces the grey component of all colours with black ink, to minimise the amount of ink used during printing.

XML **Extensible Markup Language** is a standard for creating markup languages which describe the structure of data. It is not a fixed set of elements like **HTML**, but rather it is like **SGML** (**Standard Generalized Markup Language**) in that it is a metalanguage – or a language for describing languages. XML is a formal specification the **World Wide Web Consortium**.

Top 10 problems with PDFs

Unfortunately things can go wrong with a PDF file, even with the best intentions. Here are the top 10 features of problematic PDF's. Use this checklist to remember the main thins to check.

01	Placed Image resolution too low
02	Fonts not embedded
03	Wrong colour space assigned
04	Incorrect trim or bleed information
05	Inconsistency with native file (hairlines, gradients)
06	Spot colour misnamed or converted to process
07	Too much compression (artifacts, quality loss)
08	Incorrect page size information
09	Transparent object issues
10	Incorrect or missing ICC profile

Based on Seybold PDF Usage Survey of over 2000 PDF creators and receivers, Autumn 2004

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