Color printing workflow in DTP environment v2.0

On completion of this module you will have an understanding of the DTP workflows of color images derived from cameras and scanners; and the application of profiles for color management.

There are pointers to more detailed information contained in other color modules.

The specific areas covered are:

Color-spaces and color-space conversion

Digital cameras

Scanners

DTP output

Color management

Proofing

Module training overview

Target audience will be:

Any technician who completed "Basic Color 2" module in Professional level, or is studying to become a color specialist. This module helps to develop an understanding of color printing workflow processes in a desktop publishing environment.

Attainment Targets:

- To gain an introductory knowledge of workflow in DTP for color printing, principally in the office environment, but not focused on high-level commercial offset printing
- To gain an introductory understanding of color-spaces, and the conversion of RGB to CMYK spaces
- To gain an introductory understanding of workflow in processing images that are acquired from digital cameras
- To gain an introductory understanding of workflow in processing images acquired from scanners
- To gain an introductory knowledge of workflow for desktop publishing
- To gain an introductory knowledge of image control in Photoshop, Illustrator and InDesign
- To gain an introductory knowledge of proofing

Contents

5 Scanners

6 DTP output

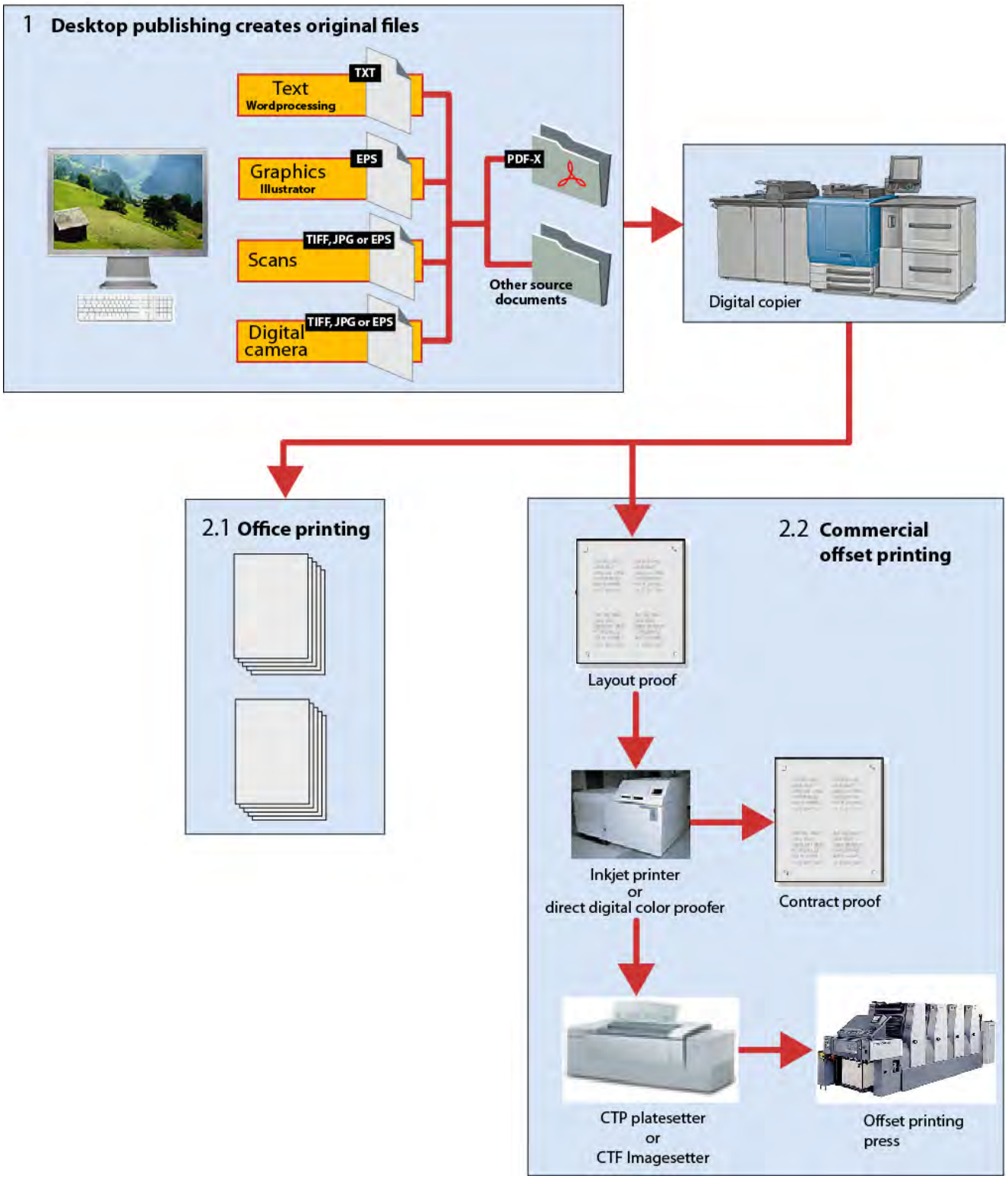
1 Workflow

There are two distinct output paths for desktop publishing:

- Office printing using digital copiers (for example: documents, brochures and newsletters that are produced within an office);
- Commercial offset printing.

If accurate color reproduction is required, decide on the printing method before commencement. This is because output systems and printing presses have different color management requirements.

A typical workflow is shown in the following diagram (see next page).



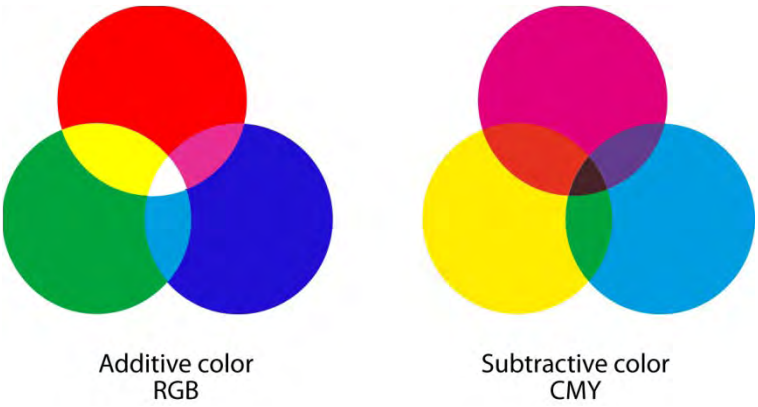
Two distinct output paths for desktop publishing: office printing and commercial offset printing. Files that are sent to a digital copier can be in PDF-X format, or in a number of other formats.

2 Color-spaces

2.1 Primary color-spaces

Human eyes perceive color with receptors for the additive primary colors: red, green and blue (RGB). All other colors are a mixture of the three, in what is called the additive color process. If we add 100 percent of all three primary colors, we get white. If we add different percentages of the colors, we get different hues. Computer monitors use the additive process with the three primary colors (RGB).

Color on paper works differently: we use pigments in inks and toners that absorb some colors of the surrounding light, and reflect others. The primary pigments are cyan, magenta, and yellow. They are called subtractive colors because, as you print pigments onto a white page, they absorb (subtract) some of the light. If we add 100 percent of all three subtractive colors, we get black. The black lacks density, so we also add black ink on the printing press, and call it four-color process printing (CMYK).



Additive colors RGB appear on computer monitors. Subtractive colors CMY appear printed on paper.

These two systems are known as the RGB and CMYK color-spaces.

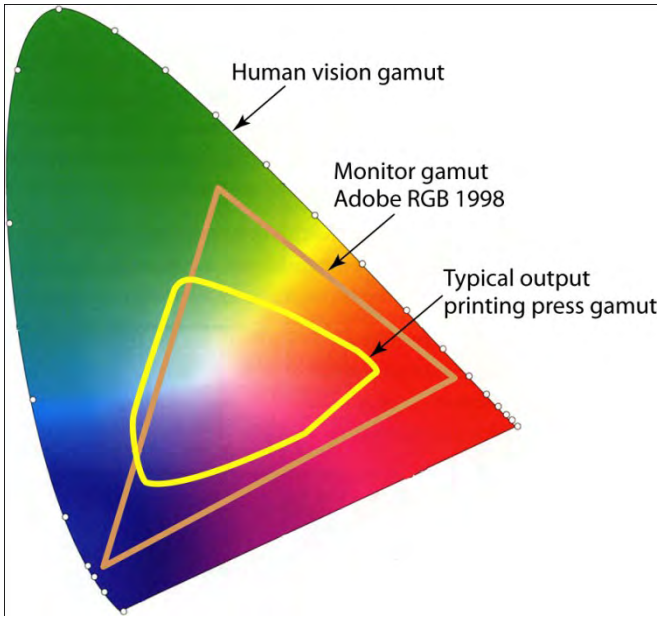
2.2 Device and editing color-spaces

In workflow we talk of *device color-space* and *editing color-space*.

2.2.1 Device color-space

Each piece of equipment that is involved with images is referred to as a device: cameras, scanners, computer monitors, proofers, platesetters, and printing presses are all devices.

No device can reproduce the whole of the visible color spectrum. The range of colors that an individual device can reproduce is called that device's *color-space*, or its *gamut*. The color-space for a particular device is defined digitally, and is called a device profile. Each device profile has categories: input, output, and display profiles.



A CIE chromaticity diagram showing a generic interpretation of the colors visible to the human eye (the human vision gamut). The computer monitor can display a wider and richer gamut than can the printer. Inside the brown line is the gamut that is displayed by a typical computer monitor. Inside the yellow line is the gamut of a generic offset printing press.

2.3 Editing color-space

Editing color-space (or *working color-space*) is a gamut within which editing of images can be performed in a controlled and consistent way. The color-space of a particular device is specific to only that device. The color-space of the editing-space is independent of devices. They are said to be gray-balanced: colors with equal amounts of red, green, and blue appear neutral gray. Editing-spaces are perceptually uniform; that is, changes to lightness, hue, or saturation are applied equally to all the colors in the image. The most common editing color-spaces are: Adobe RGB 1998, and sRGB.

Adobe RGB 1998 color-space is the most widely used color-space for printing, because it has a wide gamut.

sRGB color-space reflects the characteristics of lower-quality computer monitors and is not suitable for printing because of its restricted color gamut.

2.4 Offset printing color-spaces

Most countries have printing standards for quality control in color offset printing. They include:

- 3DAP for Australia (though SWOP is also used)
- SWOP for USA
- Eurostandard Color for Europe
- Japan Color for Japan

These standards specify many parameters for papers, inks, and technical issues beyond the scope of this module.

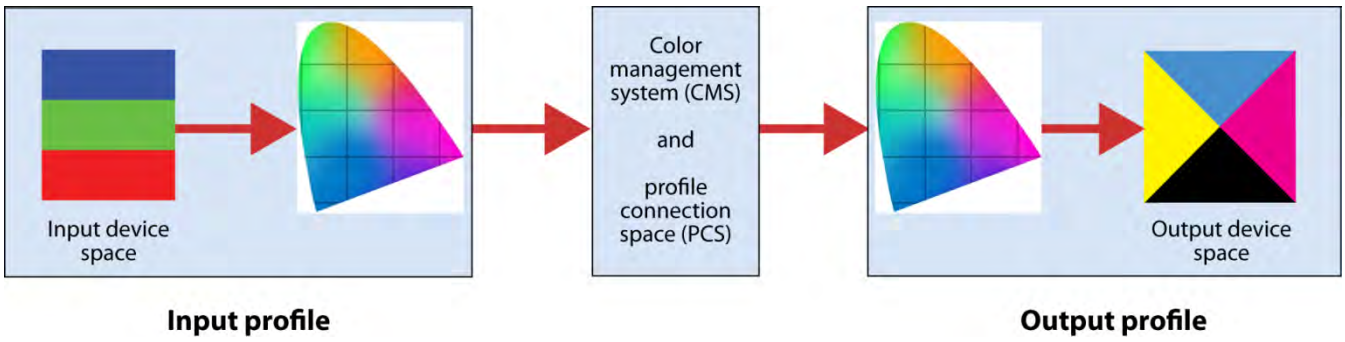
3DAP

3DAP (Digital Data Delivery for Australian Publications) is an industry group committee formed to ensure that advertising material prepared by different sources for use in publication printing can be faithfully reproduced together on the same press sheet. It is also important for the same material inserted in multiple publications to be consistent.

3 RGB to CMYK conversion

3.1 Need for conversion

Images for a desktop publishing job may come from various sources, various programs, and in various formats. The primary input color-space may be either RGB or CMYK.



If your output is to be CMYK, then plan which images need conversion and when to make the conversion. Input and output profiles are connected through the color management system.

Digital copiers always print CMYK, so RGB images must be converted to CMYK, otherwise color distortions will happen. It is important that CMYK images should never be converted twice (or colors will be distorted), so you have to plan your work.

3.1.1 CMYK-to-CMYK conversion

It is possible to convert CMYK-to-CMYK, but the process is not recommended because it rarely gives good results, especially in the reproduction of blacks. The most affected are pure blacks that have no other colors (for example, black text). They will be converted to a black color that also contains other inks besides true black.

If you decide to convert CMYK-to-CMYK, one method is to use a type of ICC profile that is known as a *device link*. The process can be performed with software like ProfileMaker Professional, or MonacoPROFILER.

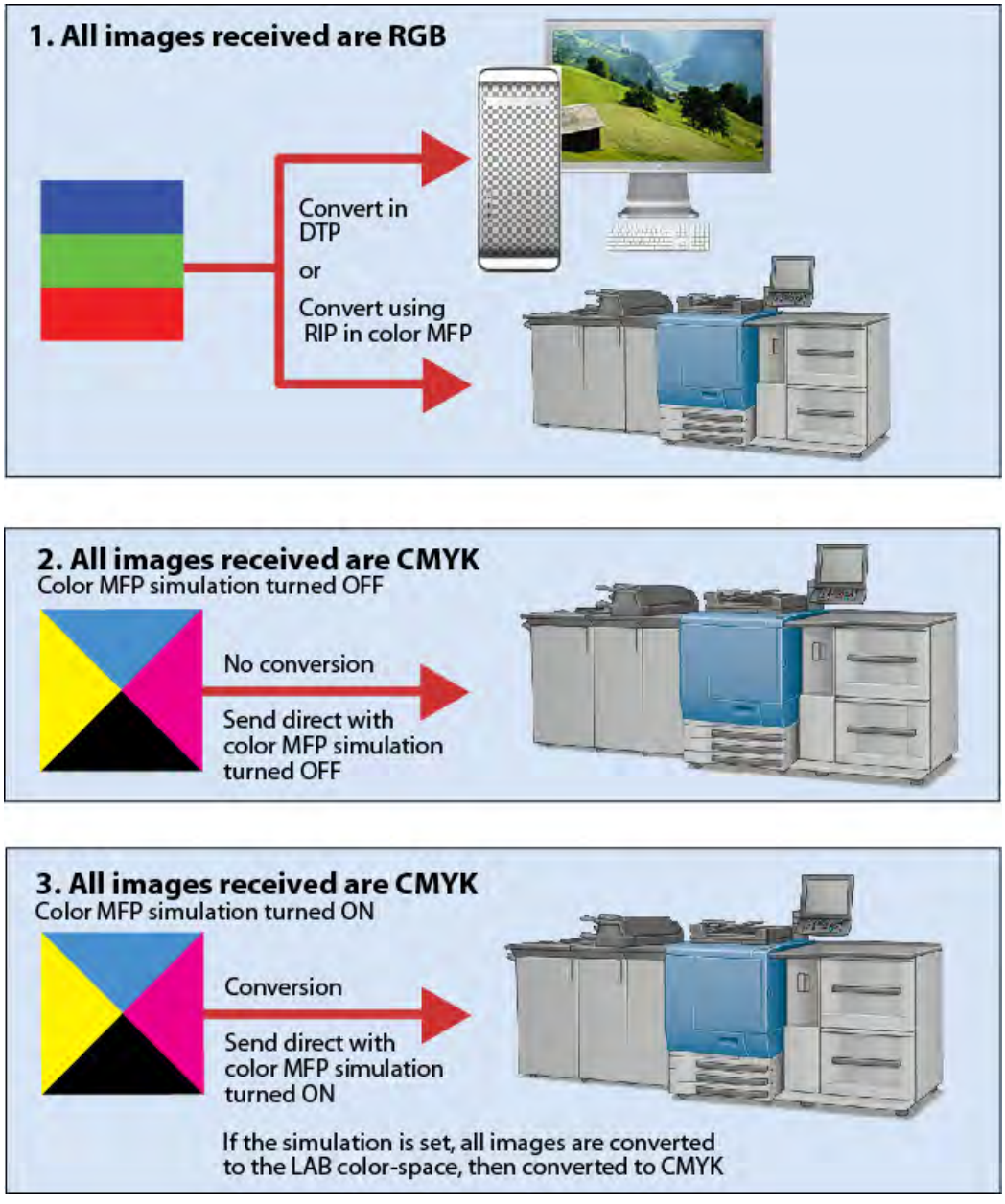
See also the module *DTP Applications, section 1.1.2 Color Management using ICC Profiles*.

3.1.2 Conversion options

The questions are:

- what images need conversion; and
- where will the conversions take place?

The three options are shown in the following diagram.



Many DTP documents include both CMYK and RGB images, therefore the combination of above workflow will be used.

3.2 Batch conversion

If you have a lot of RGB images which need conversion to CMYK, they can be batch converted in Adobe Photoshop. The method is accessed by choosing: File > Automate > Batch.

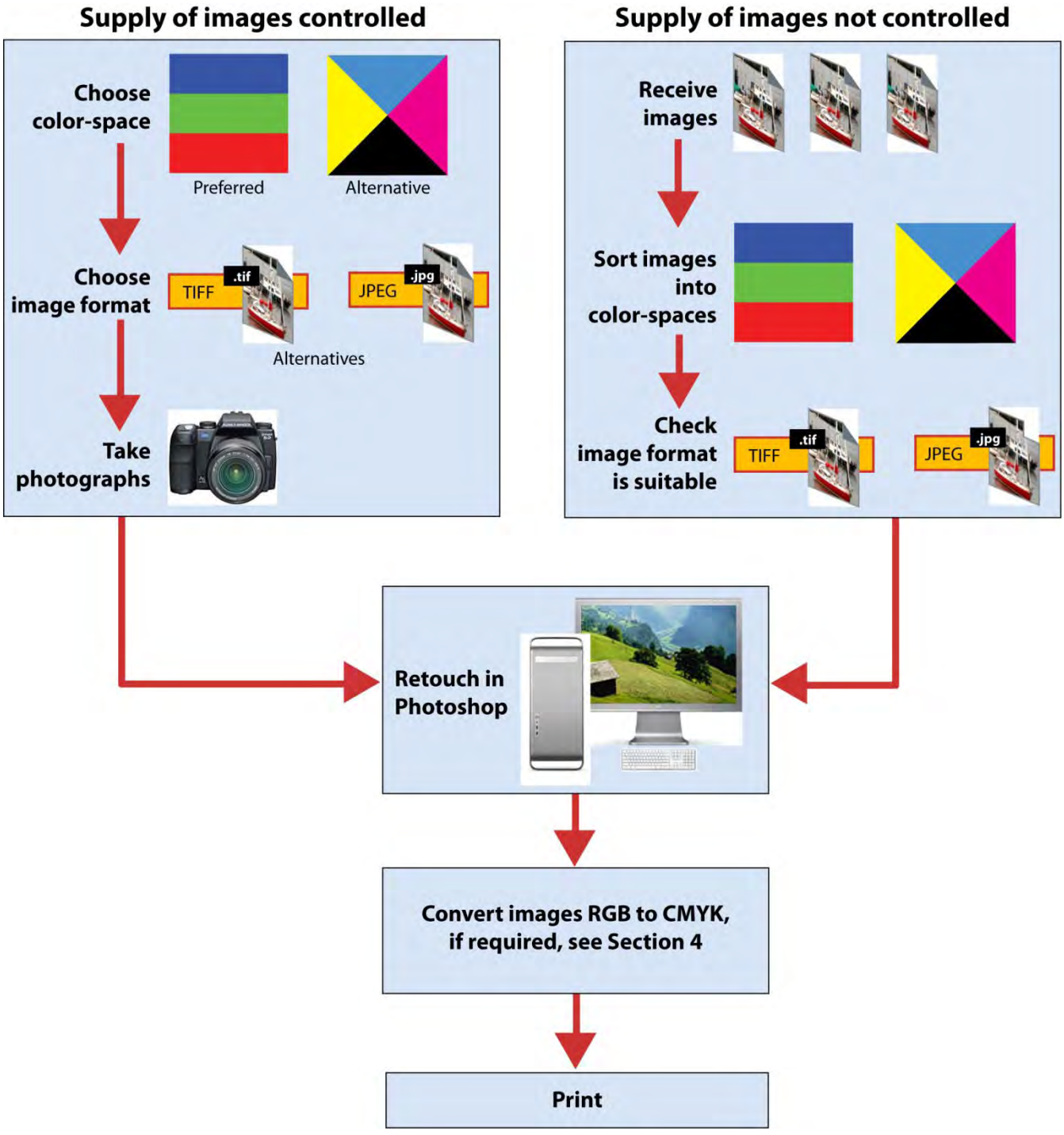
4 Digital cameras

4.1 Digital camera workflow

The workflow depends on:

- whether you can control the taking of the images (by specifying color-space and image format); or
- whether the images are supplied to you before you can specify.

There are many types of image file formats. Adobe Photoshop will open most common files, but only a few are suitable for your output. You are most likely to receive files that are RAW, TIFF, or JPEG. You will usually output in either TIFF or JPEG, depending on quality. See the table in section 4.3 Digital camera file formats.

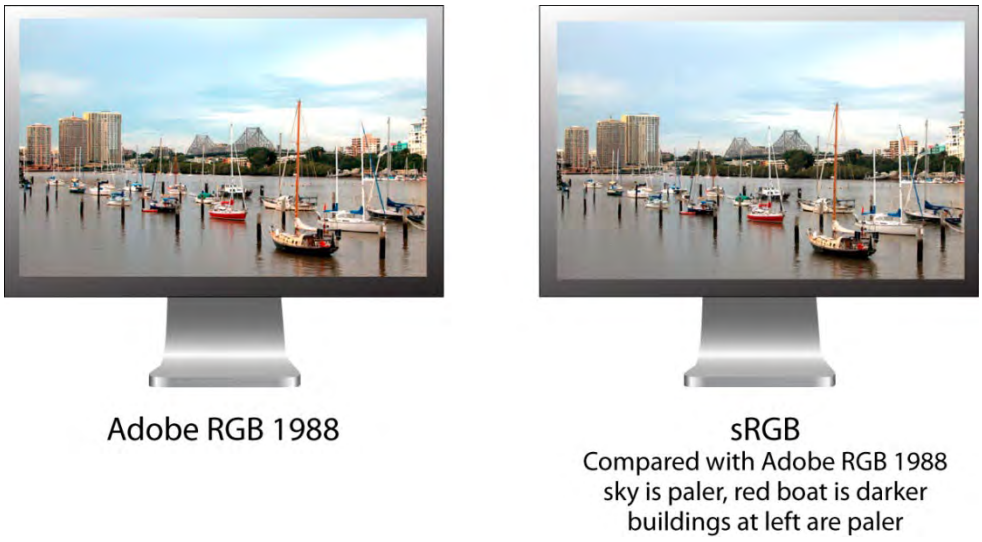


The workflow for camera images depends on how much control you have on the source.

4.2 Digital camera color-space

To ensure that color is accurately reproduced, the editing color-space must be set. For the purposes of this module, we are concerned with the color gamut (the range of colors that will be used). The most common color-spaces used, is either Adobe RGB (1998), or sRGB.

Adobe RGB (1998) is the color-space that you should use because it has a wider color gamut. sRGB is too narrow for desktop publishing. Although the sRGB color-space can be converted to Adobe RGB (1998), the conversion does not achieve better results. The original color data cannot be created after the photograph has been taken. Also, such a conversion can lead to uneven tonal gradation (also known as skipping, stepping, or tone jump).



Different color-spaces: sRGB has a noticeably narrower gamut.

4.3 Digital camera file formats

There are numerous image file formats that you could receive. The most common are:

Short name	Extension	Color quality	File size	Compression	Used for
RAW	.raw	highest	high	nil	Maximum color detail with high bit-depth
TIFF	.tif	high	high	nil	Widely used for printing
JPEG	.jpg	medium	small	lossy	Widely used for printing where smaller file size is more important than quality
EPS	.eps	high	medium	nil	Used in PostScript printing environment. Does not allow soft proofing.

Not recommended profiles

GIF	.gif	low	small		Low resolution on web sites
PICT	.pct	low	small		Low resolution previews

Adobe Photoshop will open and process all these files, but only a few are suitable for your output. You are most likely to receive files that are RAW, TIFF, or JPEG. You will usually output in either TIFF or JPEG, depending on quality. You may use EPS in a page layout program (such as Adobe InDesign). This is suitable for files which are prepared for offset printing in a PostScript environment. Remember that EPS images don't allow soft proofing (*see* section **8.5 Soft (monitor) proofs**).

4.3.1 File resolution

You must be sure that the file resolution is adequate for the job in hand. Be aware that higher resolution files produce a larger file size. The total job size can add up substantially with many files in a document. It would be nice to print everything at the highest resolution possible, however consider the time and cost increase with higher resolution. The resolution should be high enough to achieve the required final quality that is wanted.

There are various measures of resolution that are often confused – be careful!

DPI (dots per inch) is used for printers (more dots gives higher resolution).

Printer	Typical dpi
Office laser printers	600
Inkjet printers	Up to 6,000
Offset CTF image setter	1,200 to 4,800

PPI (pixels per inch) is used for computer monitors, scanned images, and *raster* outputs from software like Adobe Photoshop (more pixels gives higher resolution).

Printer	ppi
Website pictures	72 to 96
Halftones for offset printing	300 or 350

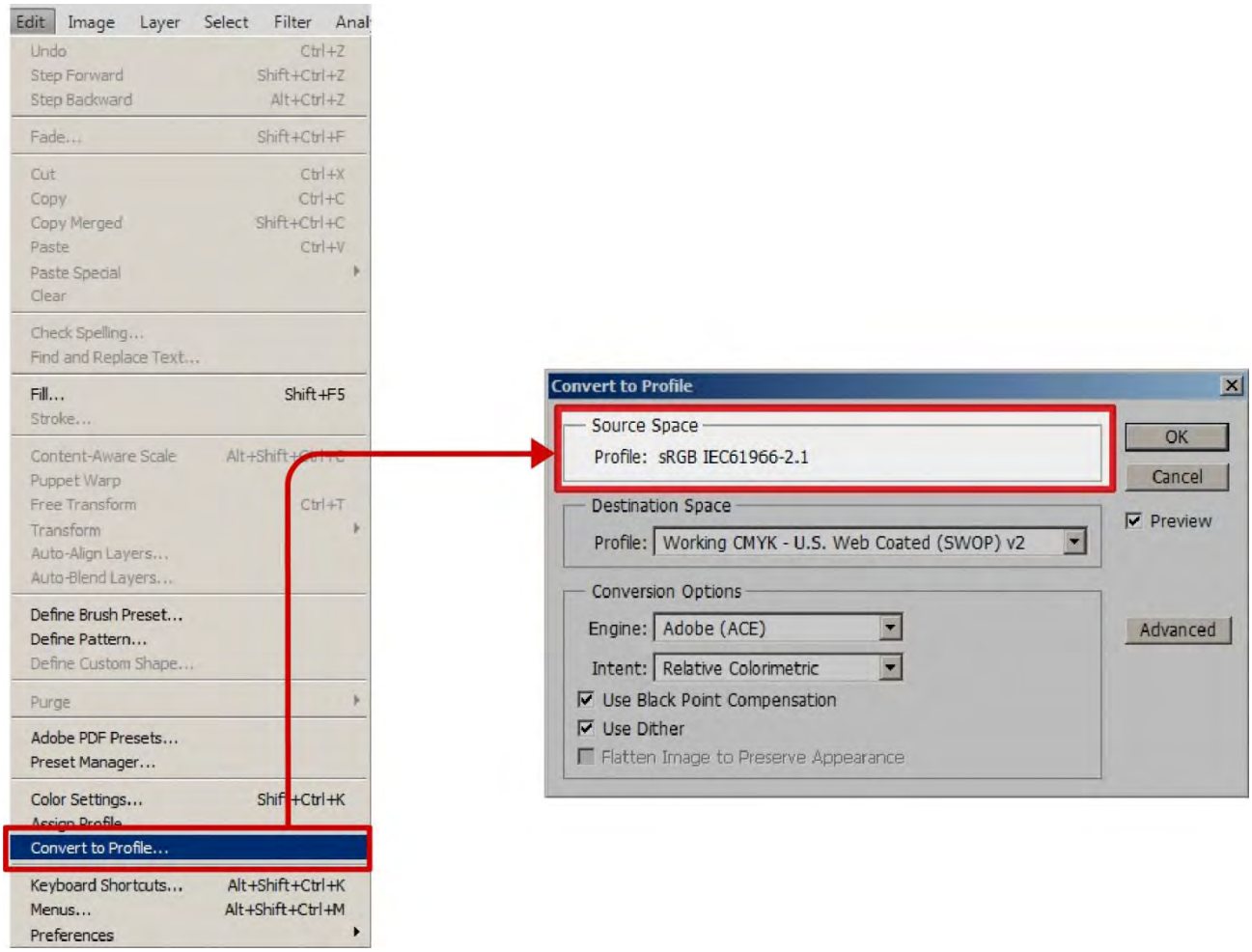
It is common to use a PPI value twice the value of LPI.

LPI (lines per inch) is used for screen frequency (more lines gives higher resolution).

Publication type	Screen frequency lpi
Newspapers and newsletters	90 to 100
Brochures and magazines	133 to 175
Fine art books and magazines	150-200

4.4 Checking digital camera profiles

It is a simple matter to check or convert a profile. In this example, the image is intended for output for offset printing, so the appropriate profile is determined as the Destination Space. Sometimes there is a noticeable shift in the display colors as the new profile gives alternate information when describing the color numbers.



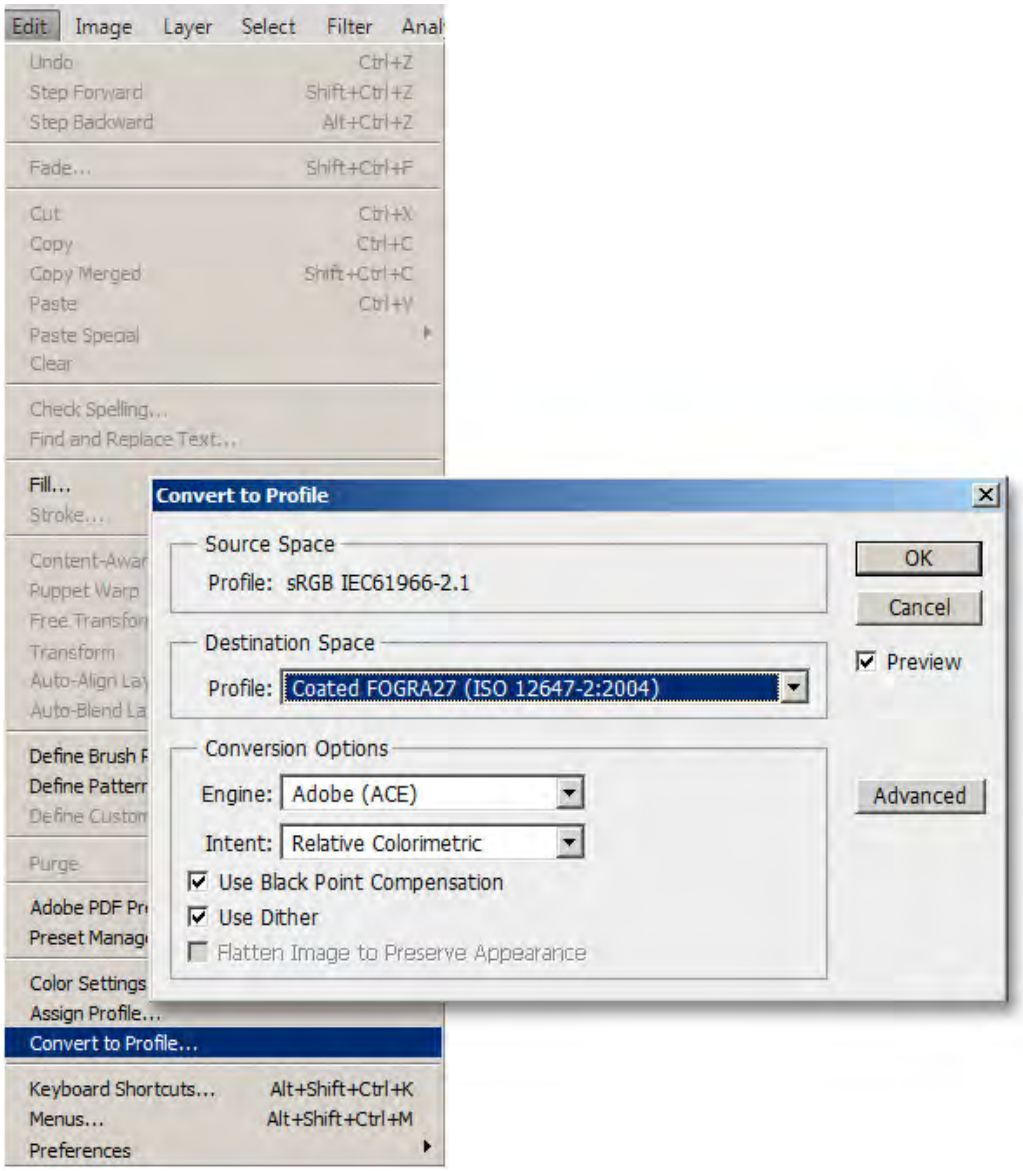
To check camera profiles, look at Convert to Profile, which is found in the Edit menu.

4.5 Digital camera color-space conversion

4.5.1 Color-space conversion

Whether RGB to CMYK conversion is necessary, is discussed in section **3 RGB to CMYK conversion**.

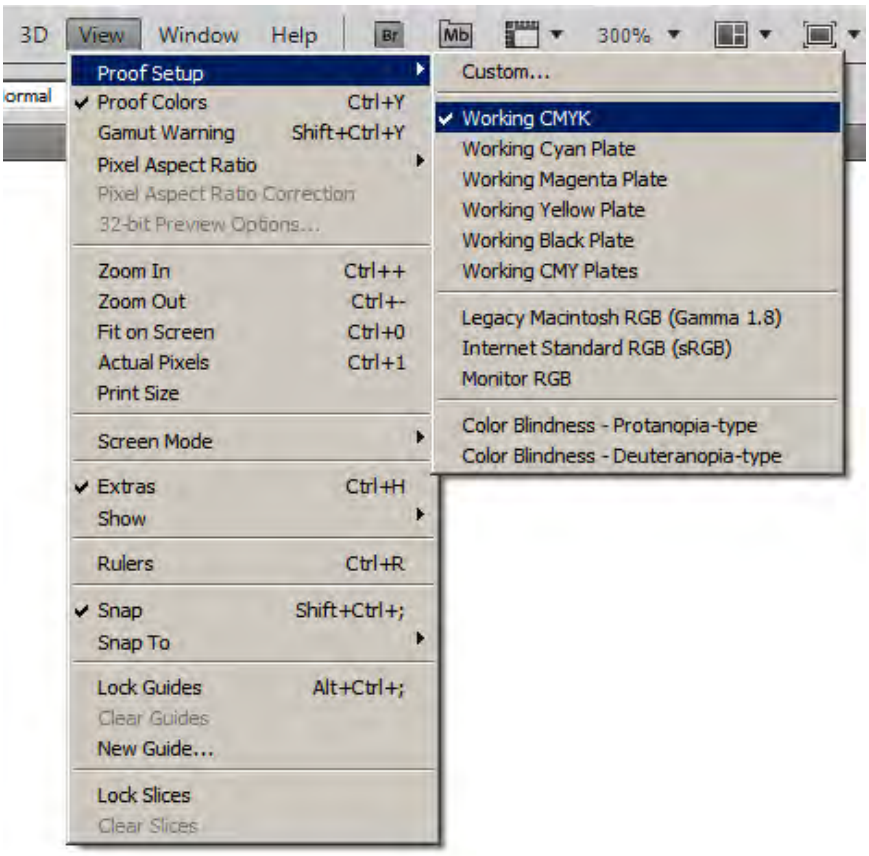
The conversion may be done at the desktop publishing stage, or by the RIP in the color MFP. If RGB images are converted to CMYK at the desktop stage, the preferred method in Photoshop is simple: in the Edit menu, select Convert to Profile, then choose an appropriate profile in the Destination Space pop-up menu (see following illustration).



Conversion of color-space is found in the Convert to Profile dialog box.

4.5.2 Soft proof of CMYK

When in Photoshop, you can view a simulated CMYK on your monitor without changing the file (see the following illustration). Your monitor must be profiled for this process.



Soft proof of CMYK is in the View menu.

4.6 Checking received camera data

Before outputting image files, you need to check:

- File format (*see* section **4.3 Digital camera file formats**).
- Color-space (*see* section **4.4 Checking digital camera profiles**).
- Batch conversion for color-space is discussed in section **3.2 Batch conversion**.

4.7 Printing a digital camera sample

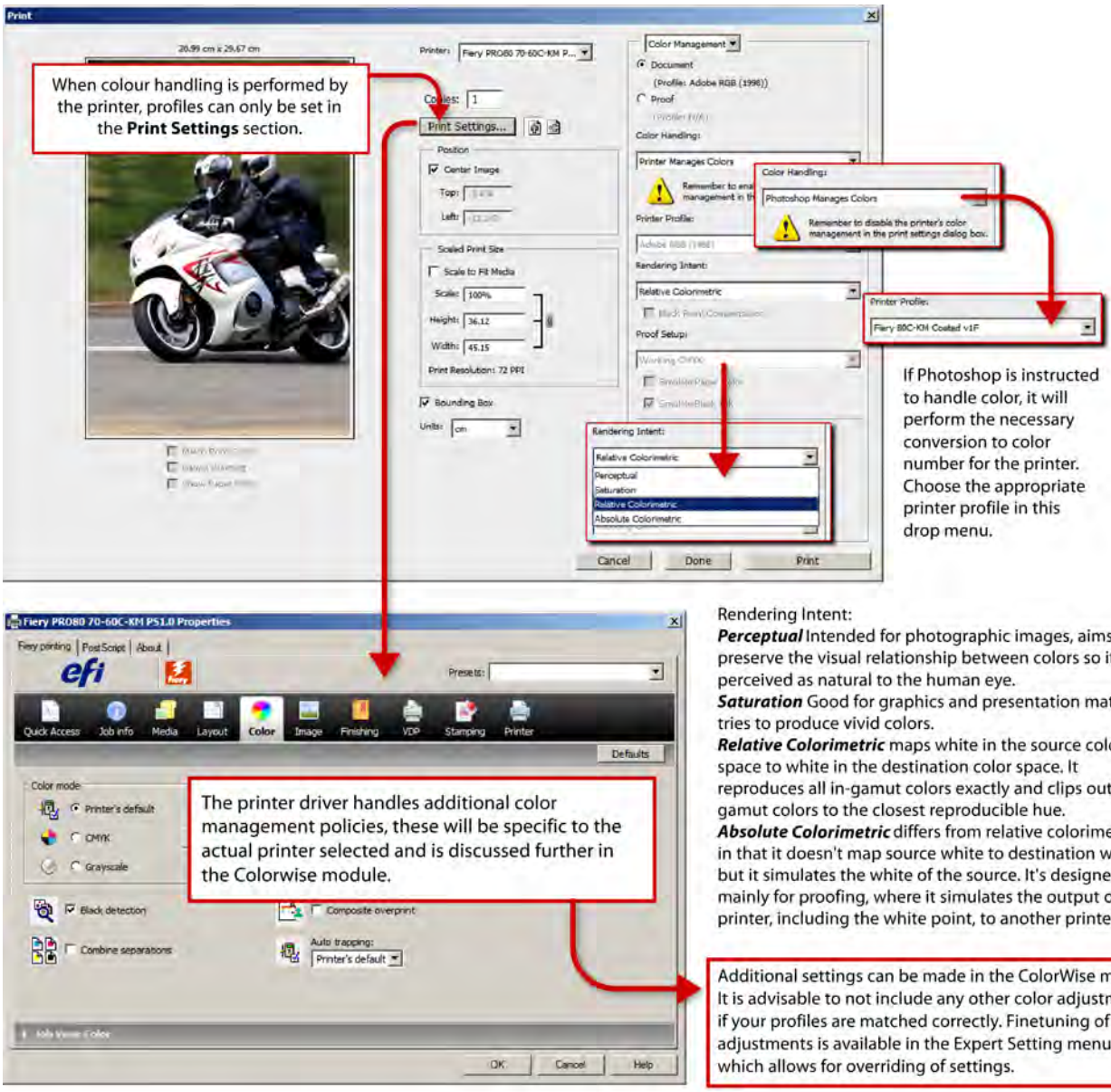
Check that the settings you have used appear correct, by printing sample images.

As mentioned in section **3 RGB to CMYK conversion**, conversion of RGB images to CMYK can take place in two places:

- at the desktop publishing stage; or
- by the RIP built into the software of the color MFP (called in-RIP separation).

Whichever method you choose, CMYK images must not be converted twice. This means color management is activated in one place, and it is deactivated in the other.

The example following will show the C7000 printer options for color conversion in Adobe Photoshop CS5.



Rendering Intent:
Perceptual Intended for photographic images, aims to preserve the visual relationship between colors so it's perceived as natural to the human eye.
Saturation Good for graphics and presentation material, tries to produce vivid colors.
Relative Colorimetric maps white in the source color space to white in the destination color space. It reproduces all in-gamut colors exactly and clips out-of-gamut colors to the closest reproducible hue.
Absolute Colorimetric differs from relative colorimetric in that it doesn't map source white to destination white, but it simulates the white of the source. It's designed mainly for proofing, where it simulates the output of one printer, including the white point, to another printer.

If you don't have a custom profile for your printer and paper type, you can let the printer driver handle the color conversion. If you choose this option, it is very important that you set up printing options and turn on color management in your printer driver.

If you have a custom color profile for a specific printer, ink, and paper combination, letting Photoshop manage colors may produce better results than letting the printer manage colors. If you choose this option, it is very important that you disable color management in your printer driver.

The steps to control conversion at the time of printing – color management is controlled either by the software or the printer.

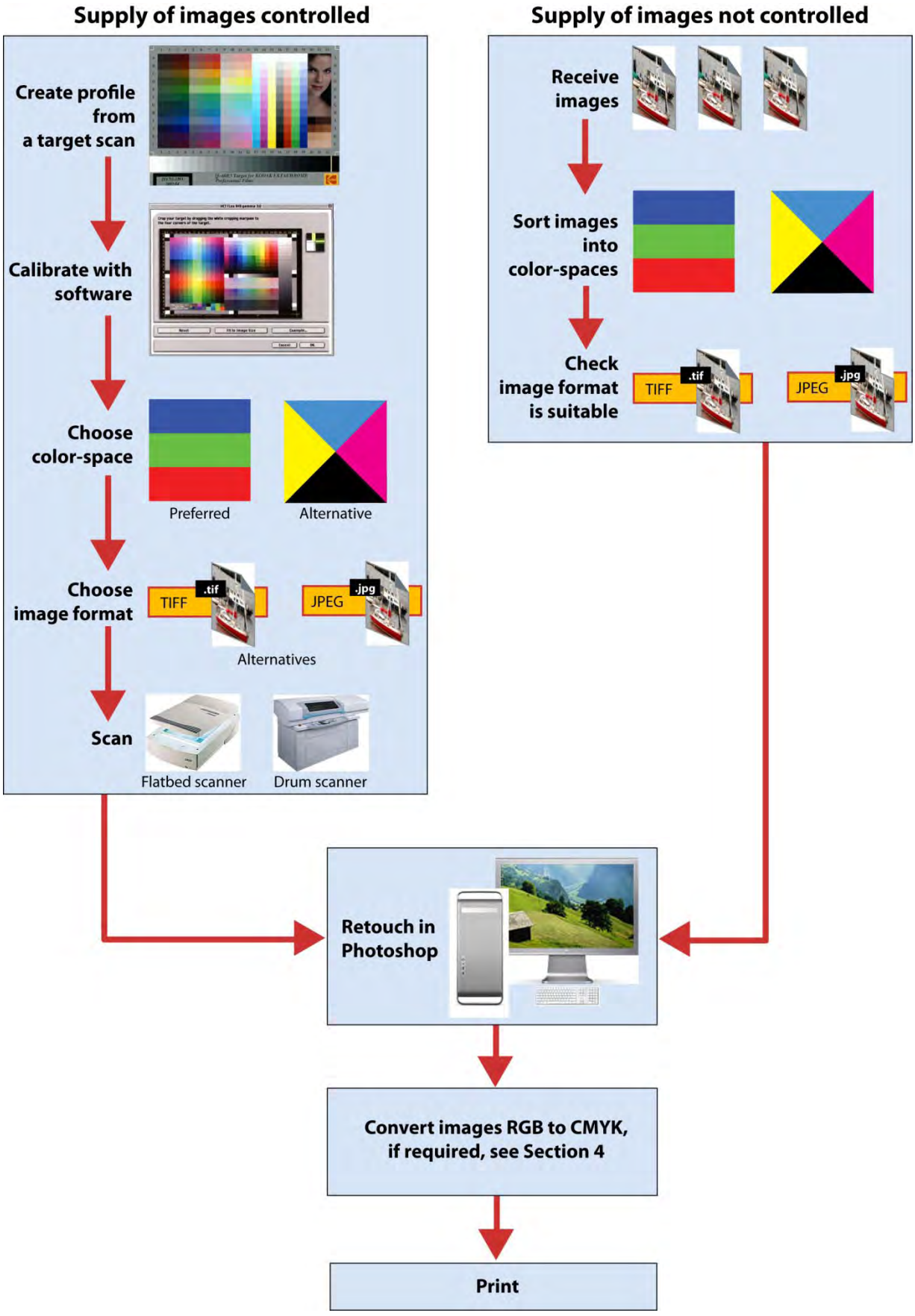
5 Scanners

5.1 Scanning workflow

The workflow depends on:

- whether you can control the image scanning (by specifying color-space and image format); or
- whether the images are supplied to you before you can specify.

There are many types of image file formats. Adobe Photoshop will open most common files, but only a few are suitable for your output. You are most likely to receive files that are TIFF, or JPEG. You will usually output in either TIFF or JPEG, depending on quality. (*See* section **5.7 Scanner file formats**).


Supply of images controlled
Create profile from a target scan
Calibrate with software
Choose color-space
Preferred
Alternative
Choose image format
TIFF
.tif
JPEG
.jpg
Alternatives
Scan
Flatbed scanner
Drum scanner
Supply of images not controlled
Receive images
Sort images into color-spaces
Check image format is suitable
TIFF
.tif
JPEG
.jpg
Retouch in Photoshop
Convert images RGB to CMYK, if required, see Section 4
Print

5.2 Originals

There are three common types of original that may be scanned:

- **Transparency** This is reversal (also called positive) film, which is exposed in a non-digital camera. When you look through the film, the colors look right. The size is 35 mm (called a slide); though 6 cm x 6 cm (120 or 220 film), and 12.7 x 10.2 (5 x 4 inches) are used for higher quality. Transparencies have been the first choice for quality for decades, though professional photographers are now increasingly using digital cameras.
- **Negative color** This is negative film, which is commonly used for amateur snapshots. The film has an orange mask which makes the assessment of the image hard until converted to positive. Negatives are difficult to profile for accurate scanning, and generally should be avoided.
- **Reflective art** This is a positive image on an opaque substrate (paper) – usually a photograph or drawing.

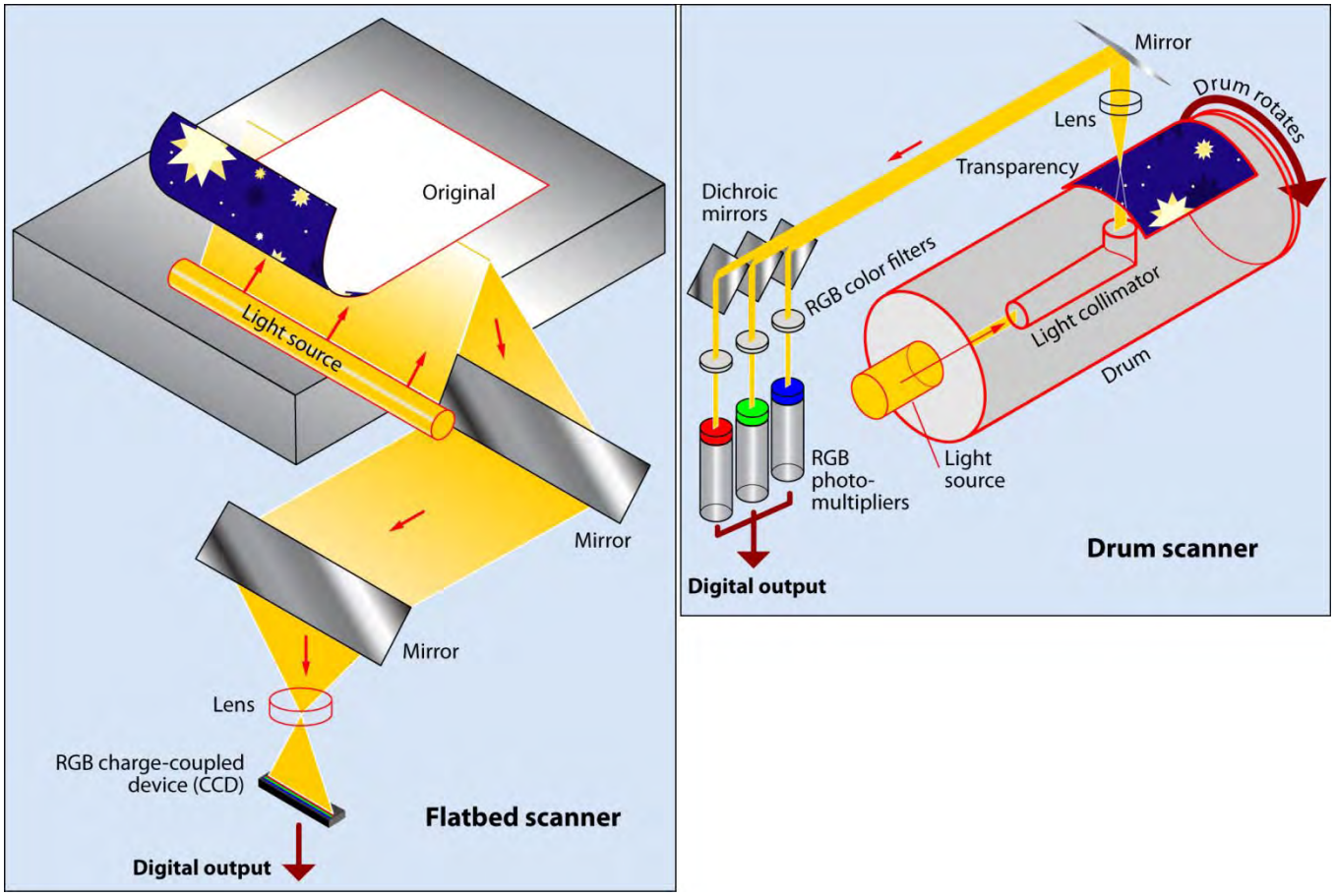
If you intend to scan an image from a printed book or magazine, the scanner has to be set specifically to avoid moiré patterns (an unwanted effect caused by interfering dot patterns).

It is also possible to scan objects by placing them directly on the glass of a flatbed scanner.

5.3 Scanner types

The two basic types of scanner are shown in the table.

Scanner type	Originals	Ease of use	Cost	Quality attainable
Drum	Positive or negative transparencies (film)	Skilled	High	Superlative
Flatbed	Positive or negative transparencies (film) Reflective art (on paper)	Easier	Medium to low	Wide variety of results depending on mode and operator's skill



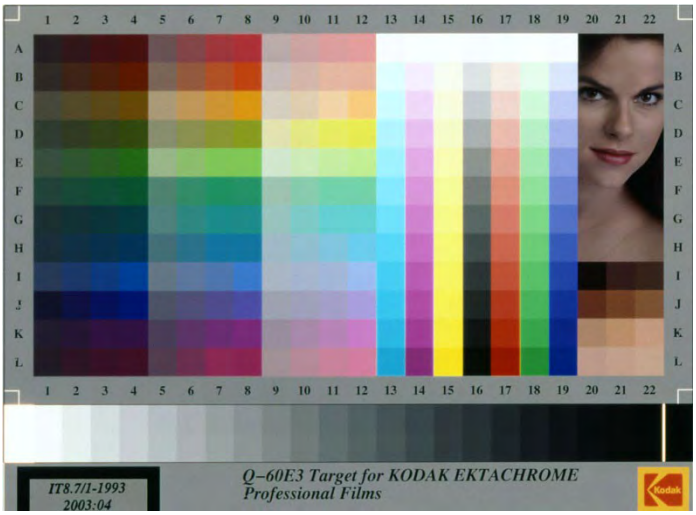
The operation of these two types of scanners is very different. Drum scanners transmit light through transparent originals. The flatbed scanner shown here is in reflective-art mode. Some flatbed scanners can also scan transparencies.

5.4 Scanner profiles: Outline

For accurate and consistent results, scanners need to be profiled. Your monitor and printer should also be profiled. You should have:

- **A target original** This is a piece of film or paper which is controlled carefully in manufacture, displaying color patches and images. Typical standards for these are IT8.7/1 for transparency, and IT8.7/2 for reflective targets;
- **Profiling software** Bought with the target original;
- **A target description file (TDF)** This has the measurements of the color patches on the target.

Building input profiles for both drum scanners and flatbed scanners is essentially the same. You should check documentation available for your particular scanner.



A typical scanner target (Kodak Q-60E3 IT8 color calibration target). Note the color patches, an image and patches showing skin tones, and a grayscale step-wedge.

5.5 Scanner profiles: Building

5.5.1 Scan the profile target

- Open the scanner's software application and turn off all the automatic features such as black point, white point, remove color cast, and sharpening.
- If available, set the scanner gamma to your workplace standard value. (The concepts of gamma are discussed in the module "Light sources and monitors in color DTP". Typically gamma is set in Photoshop at: Edit>Color Settings.)
- Scan the target, and save it as a high-bit TIFF file (choose the file format first if the software demands it). Don't save any embedded profile.

5.5.2 Prepare the target scan

Before building the profile, you need to crop the image and ensure that its long edge is exactly parallel to the top of the computer monitor. Some profiling software can achieve this; if not, then prepare the scan in Photoshop.

- Open the scanned profile in Photoshop – don't embed any profile.
- If necessary, rotate the image so its long edge is exactly parallel to the top of the Photoshop frame (Image > Rotate > Arbitrary).
- If necessary, crop the image (Image > Crop).

- If your profiling software does not allow high-bit TIFFs, downsize the file to eight bits per channel (Image > Mode > 8-Bits/Channel).
- Check the color patches for dust specs, and spot any defects with the Photoshop clone tool.

5.5.3 Build the scanner profile

Open the prepared target scan in your profiling software, and follow the software's directions.

Building a scanner profile with ProfileMaker. On-screen directions are easy to follow.

5.6 OS-level color management

There are two systems that can help in color management: one for Apple and one for Windows operating systems. Neither is a full color management system, but can be adequate if not seeking exemplary results.

There is a full discussion of this topic in the module *Color printing workflow in an office environment*.

5.6.1 ColorSync

ColorSync is an Apple application that provides an easy way to ensure accurate color in your images from the time you capture them until you print or display them. It does not work on Windows systems.

Devices, such as scanners, displays, digital cameras, and printers, each handle color differently. Color matching between devices can be difficult and time-consuming. ColorSync does this automatically, by translating the color spaces of your devices so they match as accurately as possible. The color information for each device is saved as a *ColorSync profile*, or an *ICC profile*.

Most Mac OS X graphic applications save ColorSync profiles directly in your document. ColorSync compares these profiles with the profile for your display when you view the document and with your printer profile when you print it.

5.6.2 WCS (Windows Color System)

WCS is a Windows 7 system similar to ColorSync. Microsoft has implemented the Windows Color System (WCS) which add support for more color spaces (beyond RGB to CMYK, to device-independent color spaces such as CIELAB), as well as support for additional colors for processes such as HiFi Color. There are two main types of color profiles that Windows continues to support: Windows Color System (WCS) and International Color Consortium (ICC) color profiles.

It does not work on Apple Macintosh systems. *See* the module *Color Printing Workflow in an Office Environment, section 2 OS* for more information.

5.7 Scanner file formats

5.7.1 Selection process

There are two methods of acquiring an image from a scanner, and these methods determine the process of selecting the output file format.

- **In the scanner software** If you acquire images directly using the scanner software, the software will offer you a Save function that sets the file format – this may be before or after the scan.
- **TWAIN acquisition** Image processing programs (like Photoshop), provide a function that drives the scanner and imports the image directly into the image processing program. In Photoshop, the process is: File > Import > TWAIN Acquire. The file format is selected when you save the file.

5.7.2 Formats for scanner files

The most common file formats used in scanning are as follows.

Short name	Extension	Color quality	File size	Compression	Used for
TIFF	.tif	high	high	nil	Highest quality. Widely used for printing.
JPEG	.jpg	medium	small	lossy	Widely used for printing where smaller file size is more important than quality
EPS	.eps	high	medium	nil	Used in PostScript printing environment. Does not allow soft proofing.
Not recommended profiles					
PDF	.pdf		small	some	Not for photographic images. Mostly used for optical character recognition, or document circulation.
PICT	.pct	low	small		Low resolution previews
DCS	.eps		large	nil	An outdated format that involves 5 CMYK color separations.

5.7.3 Which format to use for scanners

This choice is mostly influenced by the desired quality. Size is only a factor if large files have to be transmitted on the Internet.

For best quality, use TIFF. For smaller file size, but at a loss of quality, use JPEG.

When outputting to a PostScript environment where vector images are also included, then the EPS format is recommended - but remember that EPS images don't allow soft proofing.

5.7.4 File resolution for scanners

Ensure that the file resolution is adequate for the job in hand. *See* section **4.3.1 File resolution** described in the camera section of this module.

5.8 Color-spaces for scanners

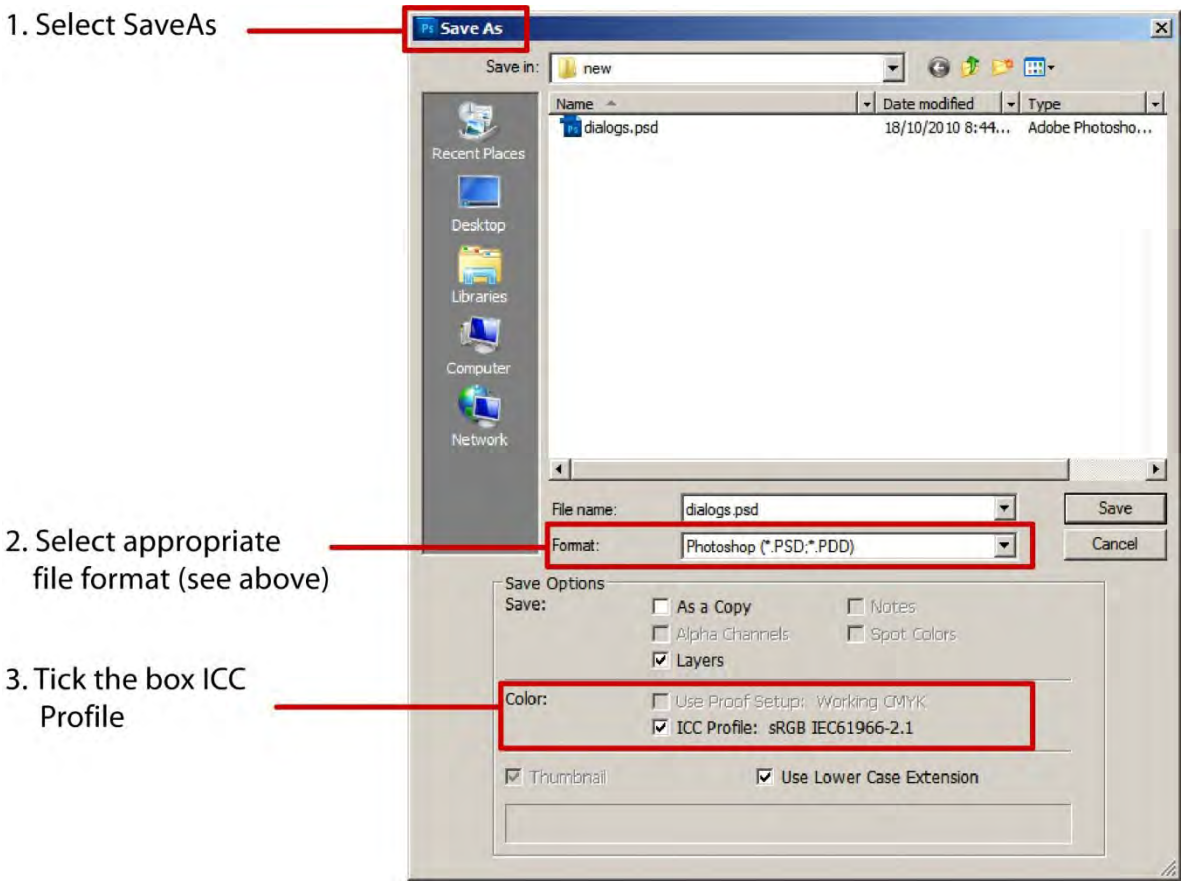
Most scanners output in the RGB color-space, however some can output directly in CMYK – especially drum scanners. You can retouch images in either the RGB or CMYK color-spaces. It is best to do retouching in RGB because of the wider gamut. If you routinely retouch in RGB, there is no advantage of scanning in CMYK. However, if you have your scanner profiled and no retouching is required, then direct output in CMYK can save time.

5.9 Embedding a profile

Embedding a profile is simply the saving of a profile in a document file. This will define the source profile used when converting to any other color-space.

To embed a color profile in a document in Photoshop, Illustrator, or InDesign:

- Save or Export the document in a format that supports ICC profiles.
- Save or Export the document in one of the following file formats: Adobe PDF, PSD (Photoshop), Ai (Illustrator), INDD (InDesign), JPEG, or TIFF.
- Select the option for embedding ICC profiles.



Embedding a profile in Photoshop.

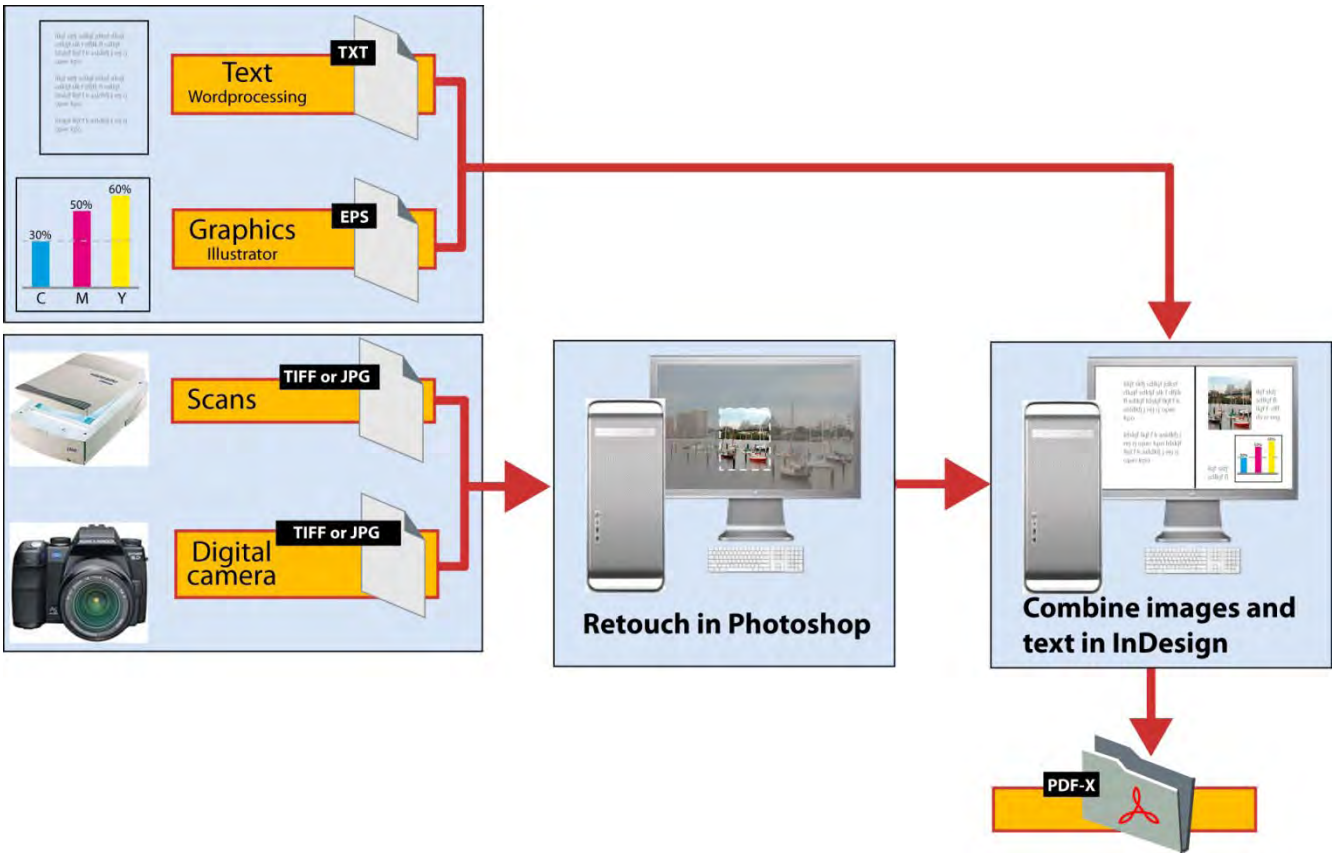
5.10 Checking scanner data

Before outputting image files, it is important that you check the following:

- File format (*see* section **5.7 Scanner file formats**).
- Color-space (*see* section **5.8 Color-spaces for scanners**).

6 DTP output

6.1 DTP workflow



6.2 Settings for DTP outputs

Settings for DTP outputs are covered in detail in other color modules. The references are listed below Color settings

Application	Module name	Section number
Photoshop	Color Management in Adobe Creative Suite	2.6
Illustrator	Color Management in Adobe Creative Suite	3.5
InDesign	Color Management in Adobe Creative Suite	4.5

6.3 Profile settings

Application	Module name	Section number
Photoshop	Color Management in Adobe Creative Suite	2.2
Illustrator	Color Management in Adobe Creative Suite	3.2
InDesign	Color Management in Adobe Creative Suite	4.3

6.4 Profile conversion in Photoshop

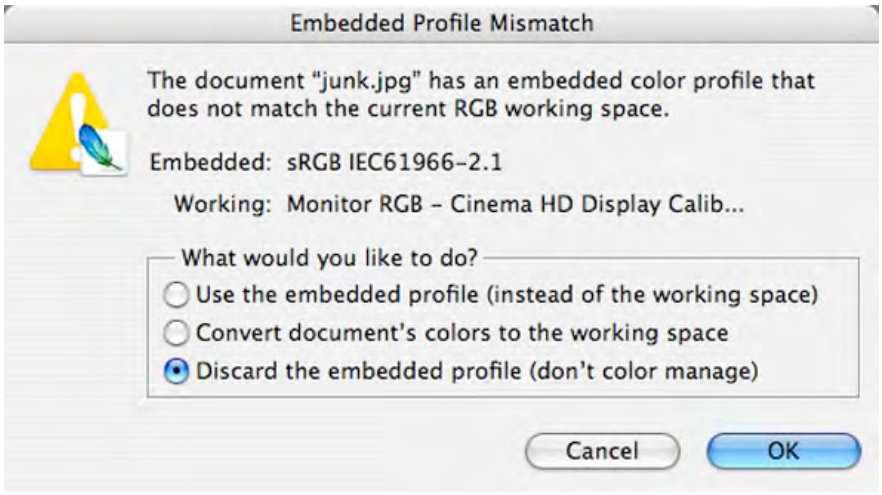
Application	Module name	Section number
Photoshop	Color Management in Adobe Creative Suite	2.5.2

6.5 Profile warning dialogues

When you import or place an image into an application you might receive a warning dialogue to advise mismatching profiles. There are three options:

- Use the embedded profile as the source profile;
- Use the embedded profile as the source profile, then convert from that source profile to another profile; or
- Ignore the embedded profile and assume or assign a different profile.

Some applications offer these alternatives, others offer only one or two. Before you change a profile, it may be good to contact the source of the image. A typical warning dialogue follows.



Other information is included in the following modules.

Application	Module name	Section number
Photoshop	Color Management in Adobe Creative Suite	2.1
Illustrator	Color Management in Adobe Creative Suite	3.1
InDesign	Color Management in Adobe Creative Suite	4.1

7 Color management

Settings for DTP outputs are covered in detail in other Konica Minolta modules. The references are listed below.

7.1 Color management with RIP

If you are printing with a RIP, be sure to deactivate color handling in the DTP software, *see* section **4.7 Printing a digital camera sample**.

7.2 Color management with application

Application	Module name	Section number
Photoshop	DTP Applications	1.1.4
Illustrator	DTP Applications	1.2.2
InDesign	DTP Applications	1.3.2

8 Proofing

8.1 Purpose of proofs

The purpose of proofing is to check the various elements of a printing job. Proofing includes checking that:

- all type and illustrations are present, and in the correct place;
- colors are applied in the correct places and that colors are accurately reproduced;
- spelling and other checks of grammar are also made.

The machine used to produce a proof is called a proofer.

8.2 Three types of proofs

There are two types of proof: a Layout proof, a Validation print and a Contract proof. The contract proof needs to be very accurate. Sometimes initial layout proofs may be produced on a less-capable proofer, with the contract proof being produced on a better machine.

- **Layout proofs** are used to check that copy and images are correct, and that colors are accurately applied in the correct places. Spelling and other checks are also made at this time. The machine used for these proofs is called a *layout proofer*.

  More than one layout proof may be required before the final OK is given for offset printing to start.

- **Validation print** which is the color reference proof at the design stage, and reflects a high quality validation of the proposed job content. It refers to ISO 12647-8. Konica Minolta bizhub PRO C6501 has been certified as a 'Validation printing system' (Details: http://fogracert.fogra.org). The Validation printer may also be referred to as a layout proofer.

  More than one Validation print may be required before the final OK is given for offset printing to start.

- **Contract proofs** are the final proofs. They form the basis of the printing contract, and the model from which the printer visually monitors work as it comes off the offset press.

8.3 Cautions in proofing

All printing machines use some form of ink (or toner). The range of colors that can be reproduced by printing machines, inks, and by different types of stock (paper), is called the gamut (*see* the illustration in **2.2.1 Device color-space**). The gamut of all ink systems is always smaller than the range of colors visible in nature.

The gamut of toner is generally smaller than the inks used on an offset press. For this reason, caution must be exercised in assessing colors which are displayed on proofs, especially where high color-fidelity is required in offset printed work.

8.4 Konica Minolta color MFPs

8.4.1 Calibration and profiling

Settings for calibration, profiles and color management for Konica Minolta color MFPs are covered in other Konica Minolta modules. The references are listed below.

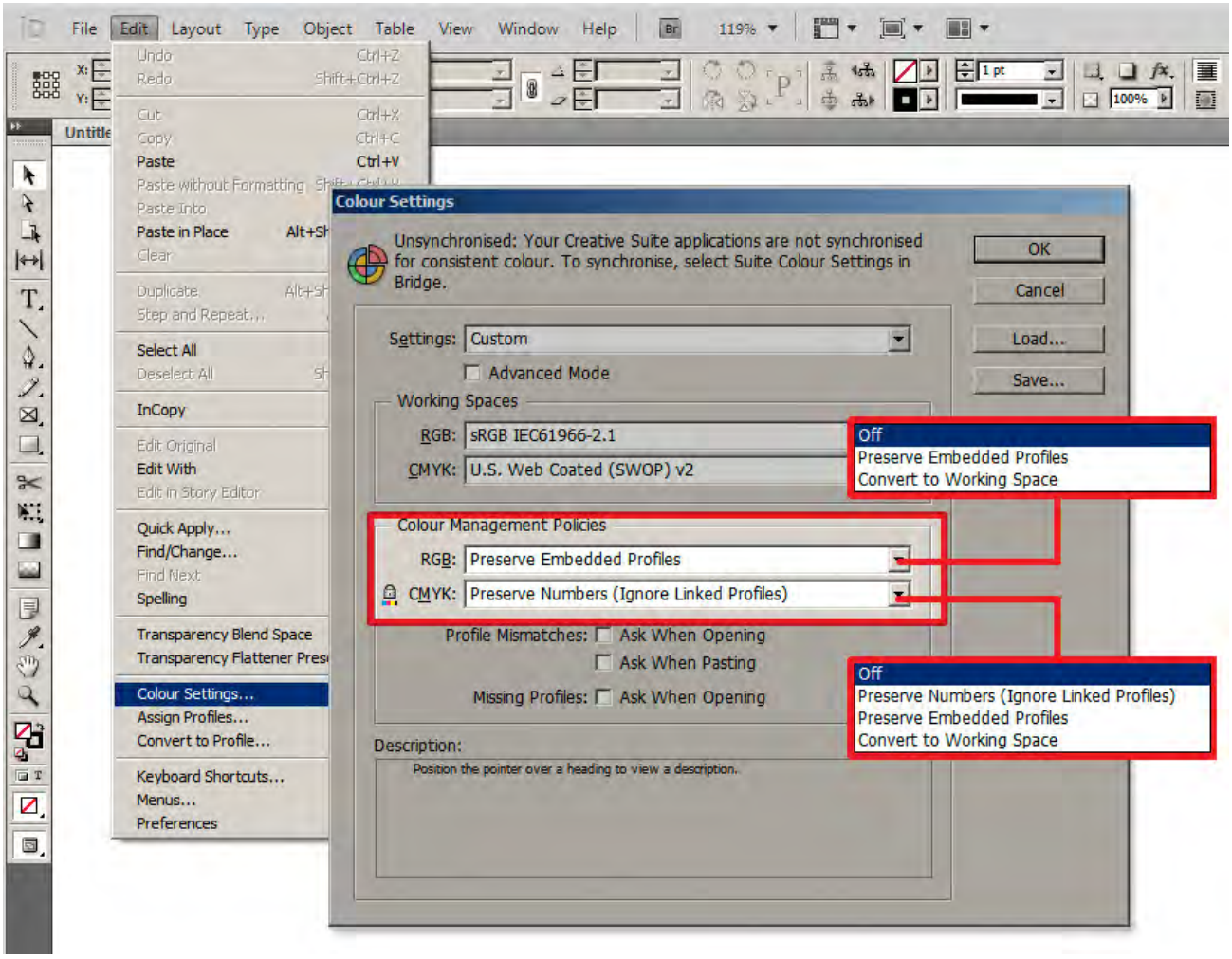
Operation	Module name	Section number
Calibration	EFI ColorWise	3.2
Creating profiles	EFI ColorWise	4.1

8.4.2 Color management

Some applications allow options for color management to be switched ON or OFF. It is important to have color management turned ON only in one place, while it is turned OFF in the other (*see* the table below).

	Color management in application	Color management in RIP
Color management controlled by application	On	Off
Color management controlled by RIP	Off	On

For further information *see*	• Color Management in Adobe Creative Suite. • Example dialogue box next page.	Section 4.7 Printing a digital camera sample in this module



Switching color management on and off in InDesign.

8.5 Soft (monitor) proofs

A soft proof (also called a monitor proof) is the simulation of how a document will look when it is printed. Soft proofing converts the colors in the document, and then displays them on the monitor so that they simulate the final printed output. The files are not actually changed, it is only the rendering of the colors on the monitor that change.

The process has limitations because it is unlikely that the monitor gamut will be the same as that of the printer. Also, the process does not work with EPS or DCS file formats.

Soft proofing is covered in other Konica Minolta modules. The references are listed below.

Application	Module name	Section number
Photoshop	Color Management in Adobe Creative Suite	2.7
Illustrator	Color Management in Adobe Creative Suite	3.6
InDesign	Color Management in Adobe Creative Suite	4.6

8.6 Remote proofs

Increasingly there is the demand for people to be able to proof files in more than one office, often in different countries. Files can be transferred from one location to another without trouble, but we must be sure that the print at the receiving end is the same as the print in the hands of the sender. This is where remote proofing fits in.

The process involves proprietary software that works on a PDF file:

- a print is made on a standard paper;
- color patches on the print are measured with a spectrophotometer;
- a second file is produced which includes the original PDF, spectrophotometer readings, paper profiles, and other data that allow the received file to be reproduced accurately;
- the received file is processed essentially in reverse order to the above.

8.6.1 Remote proofing in various countries

Remote proofing is being used in Europe and in the U.S.A.

Country	Source of information
Europe	www.remoteproof.org
USA	www.sonydadc.com www.absolute-proof.com/the_halftone_dot_simulation_issue.htm www.americanprinter.com/mag/printing_coming_soon_screen

8.6.2 Remote proof requirements

To operate a remote proofing system both sender and receiver must use the same system. You require:

- proprietary software;
- standard paper stock;
- a spectrophotometer.