Shirley Photographic Society

Solihull Photographic Society

IMAGE OUTPUT

Bob Breach and
Phil Moorhouse

So you have spent time adjusting your great image to its optimum state

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What do you do with it?

Finished "master" image

Back-up copies

What are you going to do with it?

Which:
- File type
- File size
- Colour space
- Colour profile

High quality TIFFs or Jpegs → Adobe RGB → Large prints for competition or display

Jpegs at screen resolution → s-RGB → Projected image/slide show

Low quality Jpegs → s-RGB → Web/tablet/phone

Right file type for right purpose

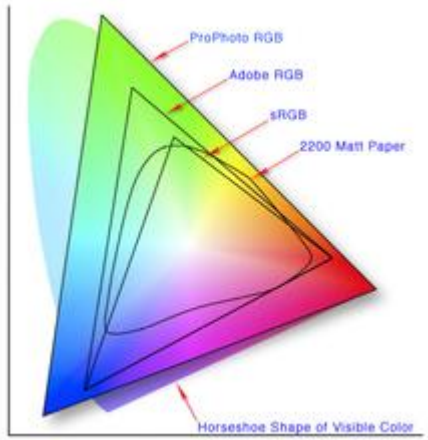
FILE TYPES

- Raw- contains maximum amount of “as captured” information. If edited in raw software the adjustments may be stored as small sub file
- Tiff – output file with no compression. Best quality but can be large
- Jpeg- compressed file. Lower quality but smaller file size and fine for screen based output
- Psd- Photoshop specific file type with adjustments kept as layers. Can be very large
- Lots of others for a range of different purposes

MASTER IMAGE FILES?

- Ideally:
  - Take and store master image as edited raw file
  - Can then "develop" any number of other copies in different formats
- Alternatively
  - Keep one master copy in highest quality format available (TIFF or high quality jpeg)
  - Make other output files as necessary according to need

WHAT COLOUR SPACE?

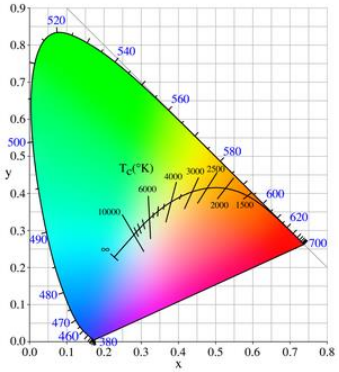


- Colour space defines the range of colours that can be displayed
- 2 main types
  - Adobe RGB: larger space optimised for printing
  - s-RGB: smaller space optimised for screen
- If saving files as jpeg in camera set as Adobe RGB (largest) and modify to s-RGB later if needed

Getting the colour right: profiles and calibration

COLOUR PROFILES

- A major subject in its own right and very complex
- Each piece of kit can reproduce colour slightly differently
- Photo editing software often allows sophisticated colour adjustment but useless if screen does not match printer (or projector)
- Ideally monitor, printer (and each paper), and projector should be colour calibrated so that they match



E books by Spyder on colour available for detailed reading!!

COLOUR PROFILES BASICS

Camera colour space (adobe RGB)

Monitor profile sets "standard" colour reproduction

(*But will be influenced by lighting and monitor position*)

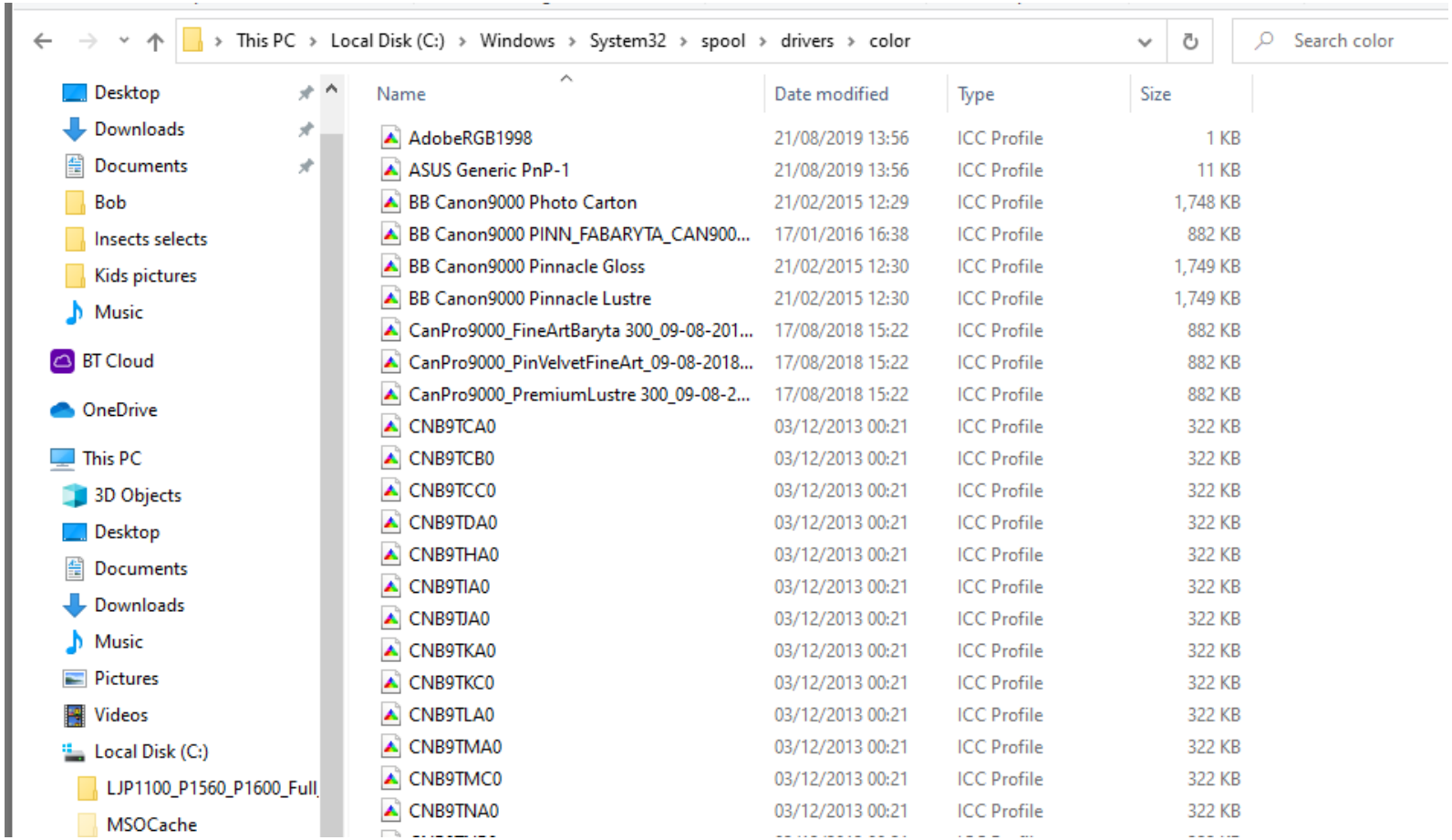
Adjust colour in editing software

Paper profile 1

Paper profile tries to "match" monitor colour to printer/paper combination

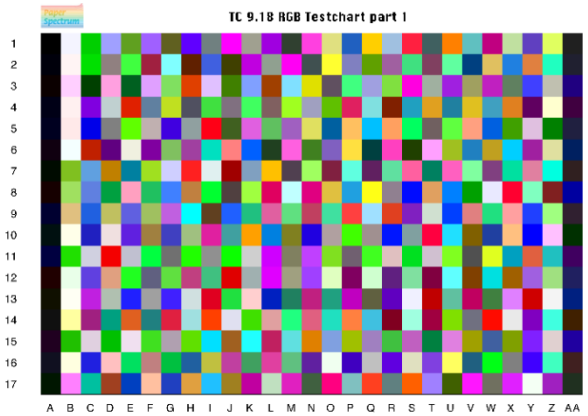
Paper profile 2

WHAT ARE ICC PROFILES



MINIMUM RECOMMENDED

- Colour profiling
  - Monitor
    - Buy or borrow profiling device
    - Make sure position and lighting good when setting up
  - Printer/paper
    - Can download free “standard” profiles for some papers
    - Best - use specialist service (free or small cost)
- Best to standardise on a few papers you like
- Make sure the profiles are set up properly in your software and changed when you use different paper



Typical test chart for colour calibration

COLOUR PROFILING SCREEN

- Spyder profiling gadget (available to borrow for Solihull members)
- Install software and run following on screen instructions
- Creates accurate colour profile for screen
- Make sure that lighting in room is optimum and use same conditions each time

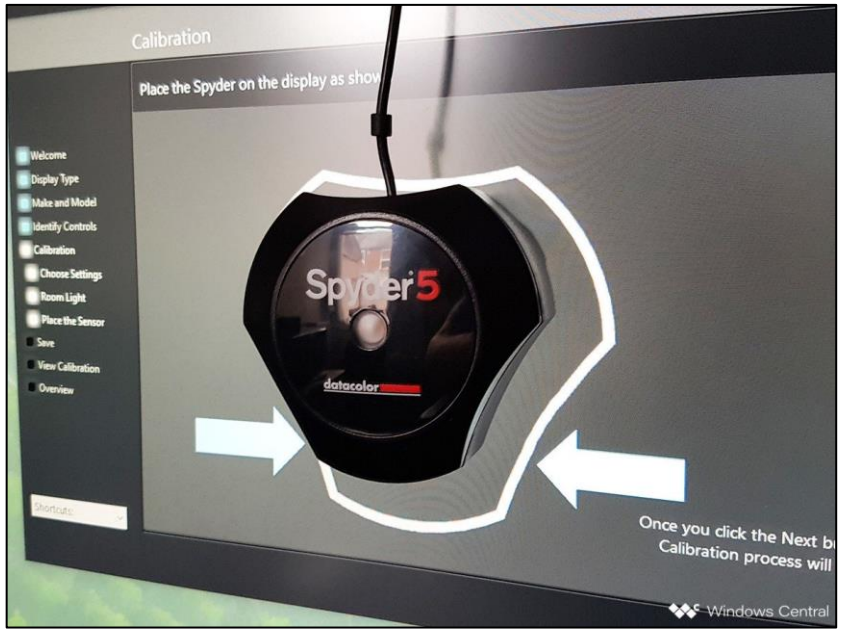


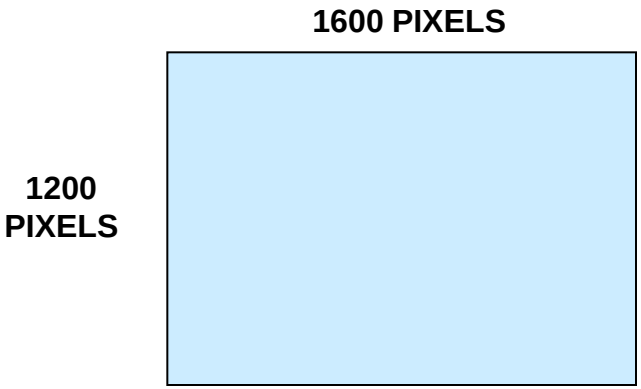
Image output for screen
(Projector, TV, Tablet)

IMAGE OUTPUT FOR SCREEN

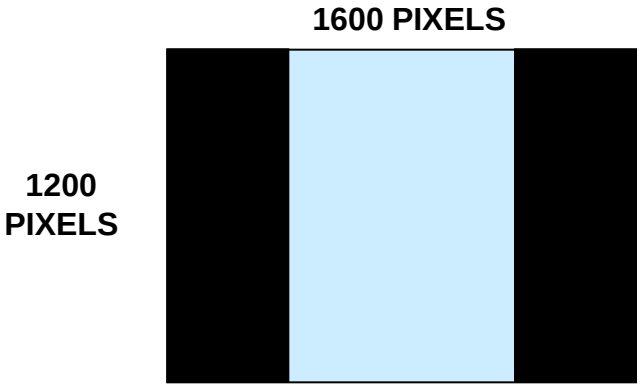
- Best to use jpeg
  - Lower quality jpegs often OK since reduce file size and/or slide show processing time
  - Use s-RGB colour space
- Think about aspect (pixel) ratio needed for final output to TV or projector
  - Most programmes allow you to save images in different aspect ratios
  - Most TVs now at least HD (1920x1080 pixels) or 4k (4096 pixels wide)
  - High quality photo projector (1600x 1200 pixels) or higher
- Can use different colour backgrounds but be careful about edges- if in doubt use black as background
- Sometimes projected images benefit from frame or border around

CARE: Solihull and Shirley use different pixel ratios for internal competitions

PIXELS FOR PROJECTION



See Phil Moorhouse notes for details on how to do this



CARE: Solihull and Shirley use different pixel ratios for internal competitions

MAKING BORDERS AROUND IMAGE

- Use image size/canvas size linked with appropriate colour for background
- Simplest way to use “stroke tool”
- Alternatively modify image/canvas size
  - Example using DPI image for competition which is less than 1600x1200 pixel and want to make 3 pixel white border
    1. Image size – set as 3 pixel less than the required dimension for projection (e.g. if 1050 pixel square then set at 1047 x1047 pixel)
    2. Canvas size – set as 1050 x 1050 and background white
    3. Canvas size – set as 1600 x 1200 and background black
- Some software also creates borders for you
- Same approach can be used for prints and any combination of borders around print but if complex best to work out on paper first

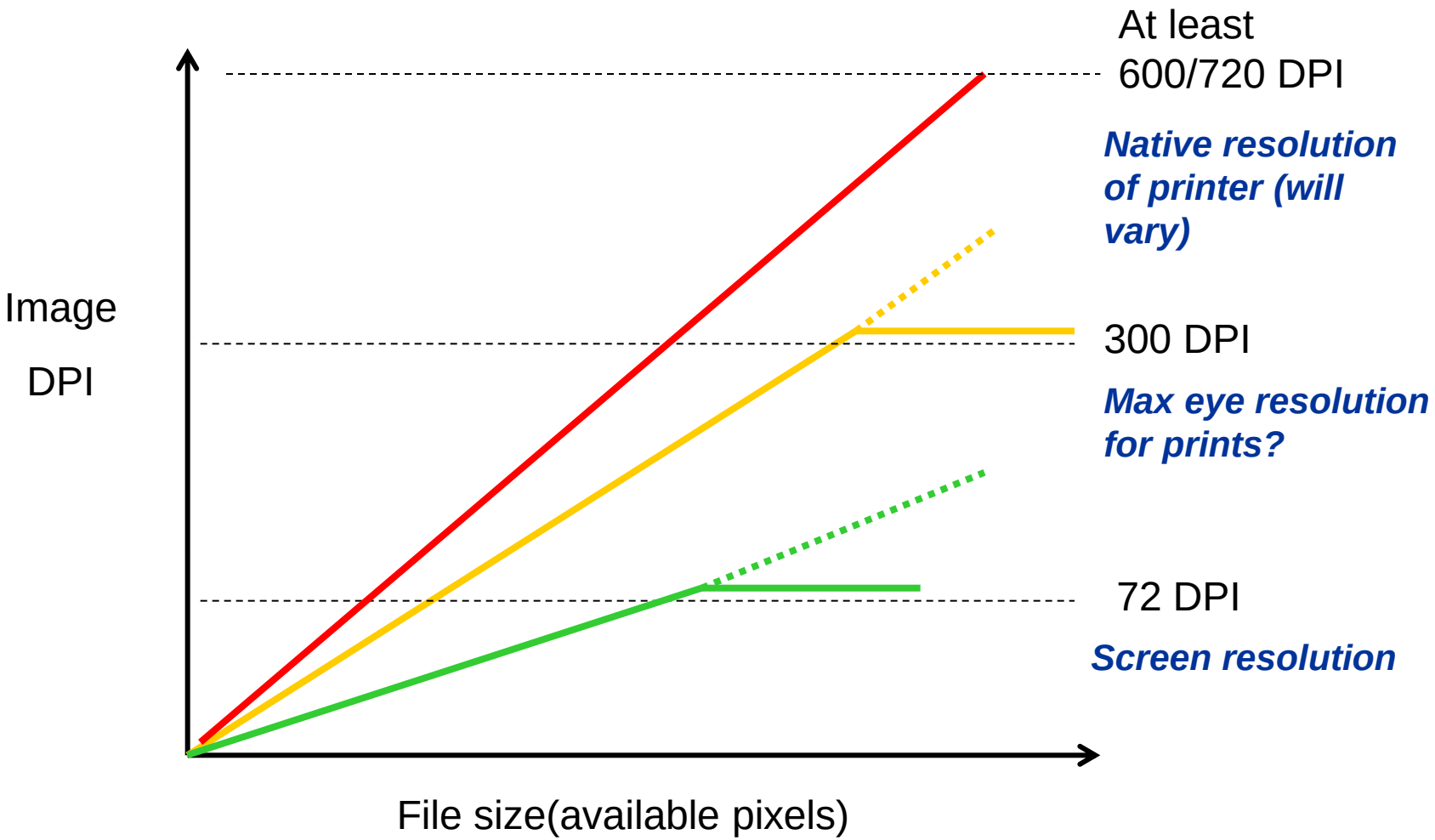
Printing and printing software

PRINTING

- Making high quality prints can be a complex process
- Requires decent printer, inks and paper
- Plus three main technical pillars:
  1. Proper set up of software and printer drivers
  2. Interpolation - optimising available pixels to print size
  3. Colour profiles- getting the colour “right”
- The overall “look and feel” of the print can be significantly enhanced by choice of paper
- Which paper to use for which print is personal choice but standardise on a few you like to minimise effort and need for separate profiles

An alternative is to use good quality commercial printer

DPI AND FILE SIZE



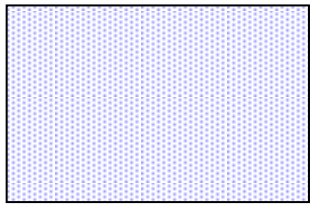
For most decent sized prints there are often not enough pixels so software has to create extra ones (interpolate)

AN EXAMPLE

23 Mp full frame camera

5616

3744



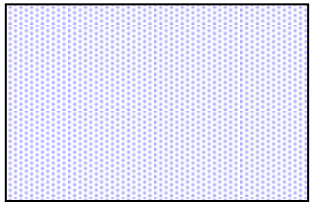
Can print at larger size un-cropped

18.72 x 12.84 in

Heavily cropped 3Mp image

2048

1536



Print at 720 dpi without interpolation

2.89 x 2.1 in

Print at 300 dpi without interpolation

6.83 x 5.12 in

To print larger requires interpolation

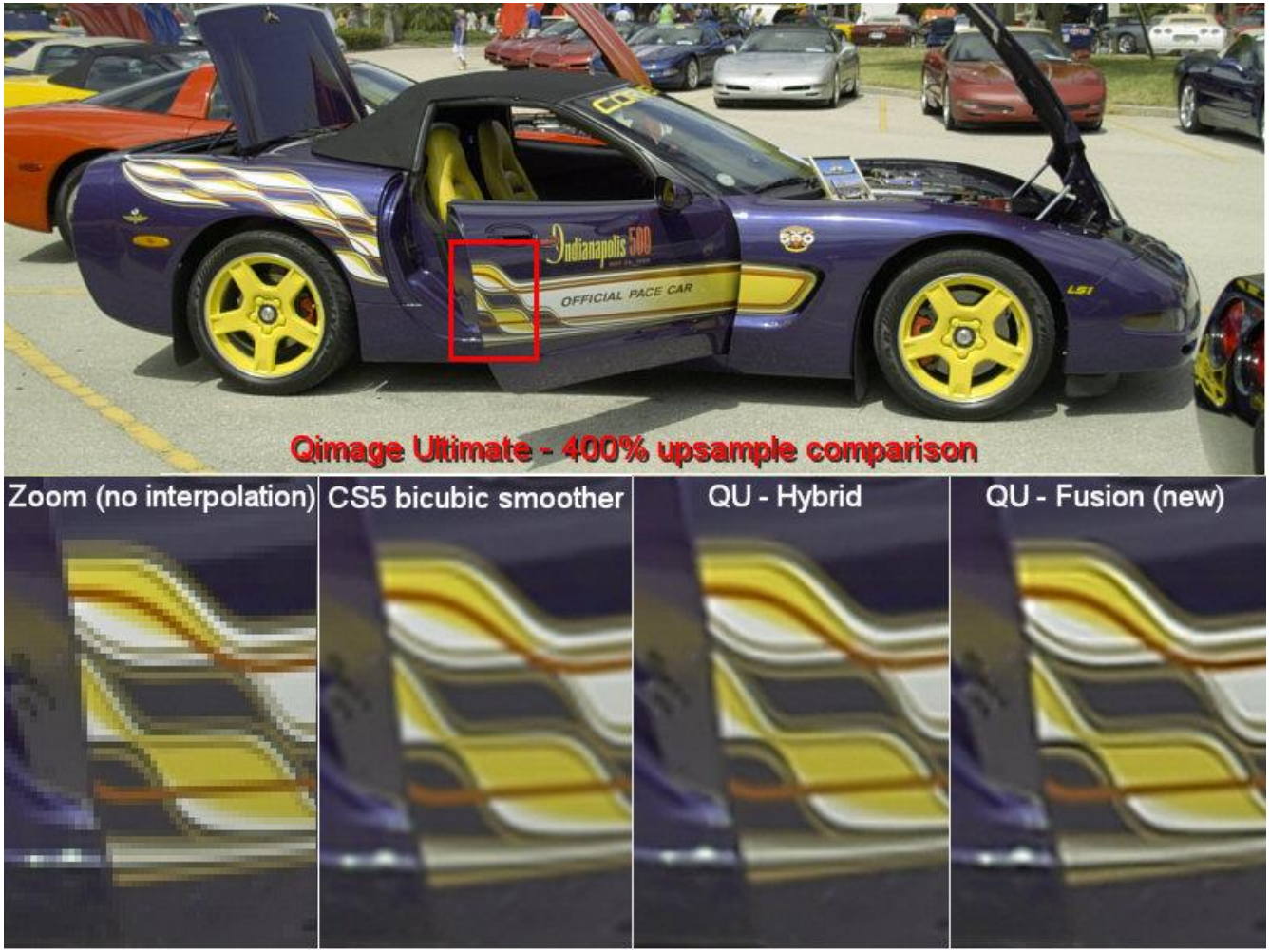
Likely that many/most images will need to be interpolated for printing at large size *particularly if cropped*

INTERPOLATION

Creating extra pixels by informed guesswork

Uses a variety of complex mathematical formulae with various names e.g. bicubic interpolation

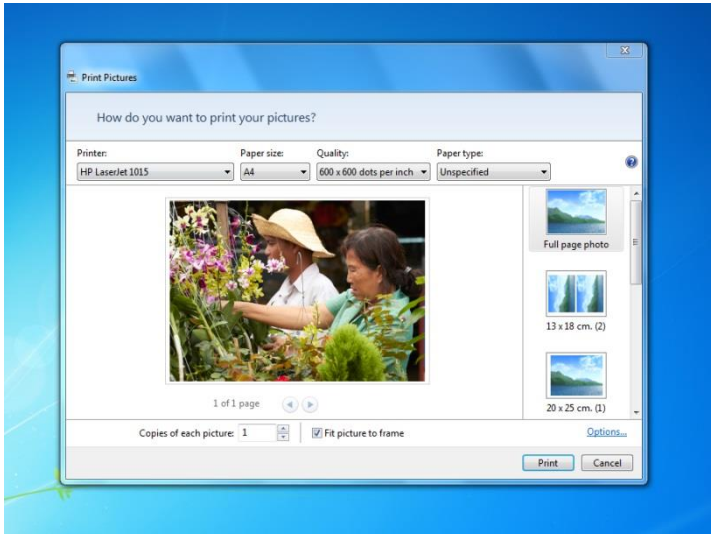
DIFFERENT TYPES OF INTERPOLATION

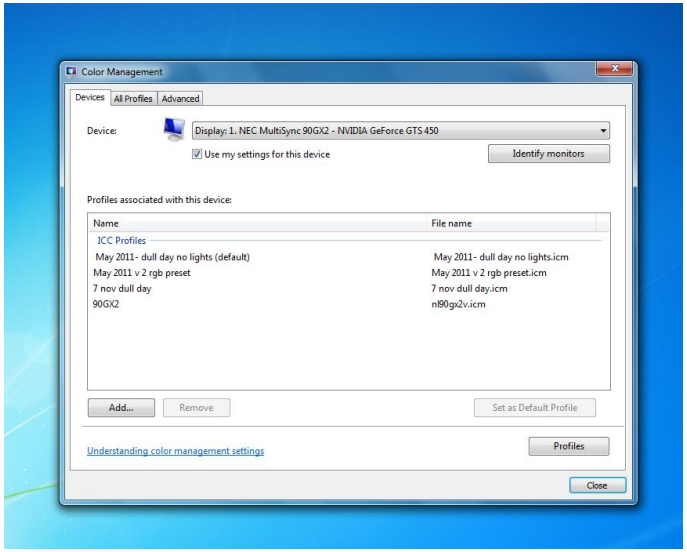


PRINTER PROGRAMMES

- Many to choose from
  - Better raw processors
  - PS Elements/CS
  - Windows free software
  - Specialist printing programmes
- Same principles
  - Decide on paper type and size
  - Decide on image size on paper
  - Decide on DPI
  - Set up suitable profiles

But always switch off printer driver in favour of the print software driver

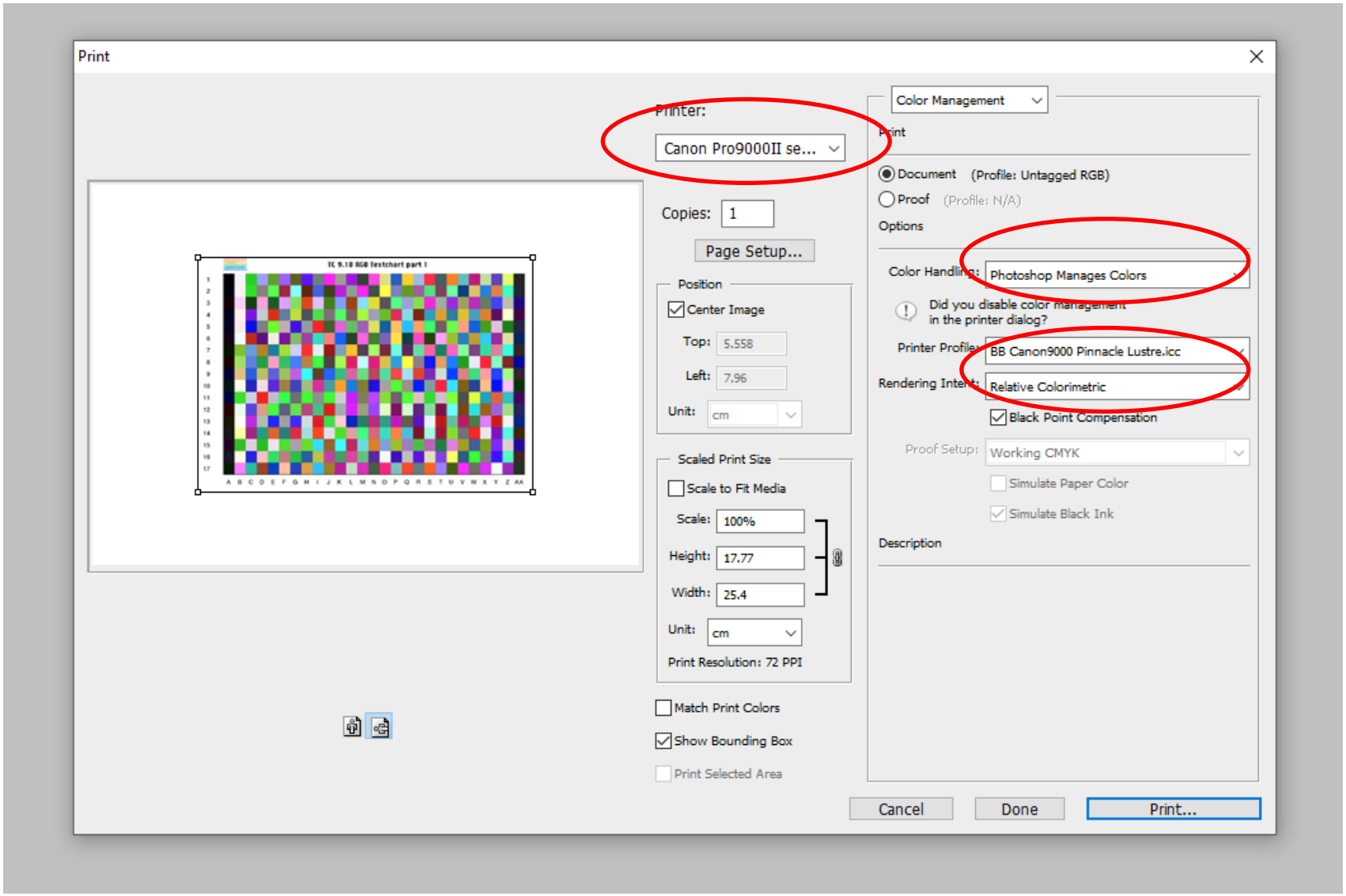




PRINTING WITH PHOTOSHOP

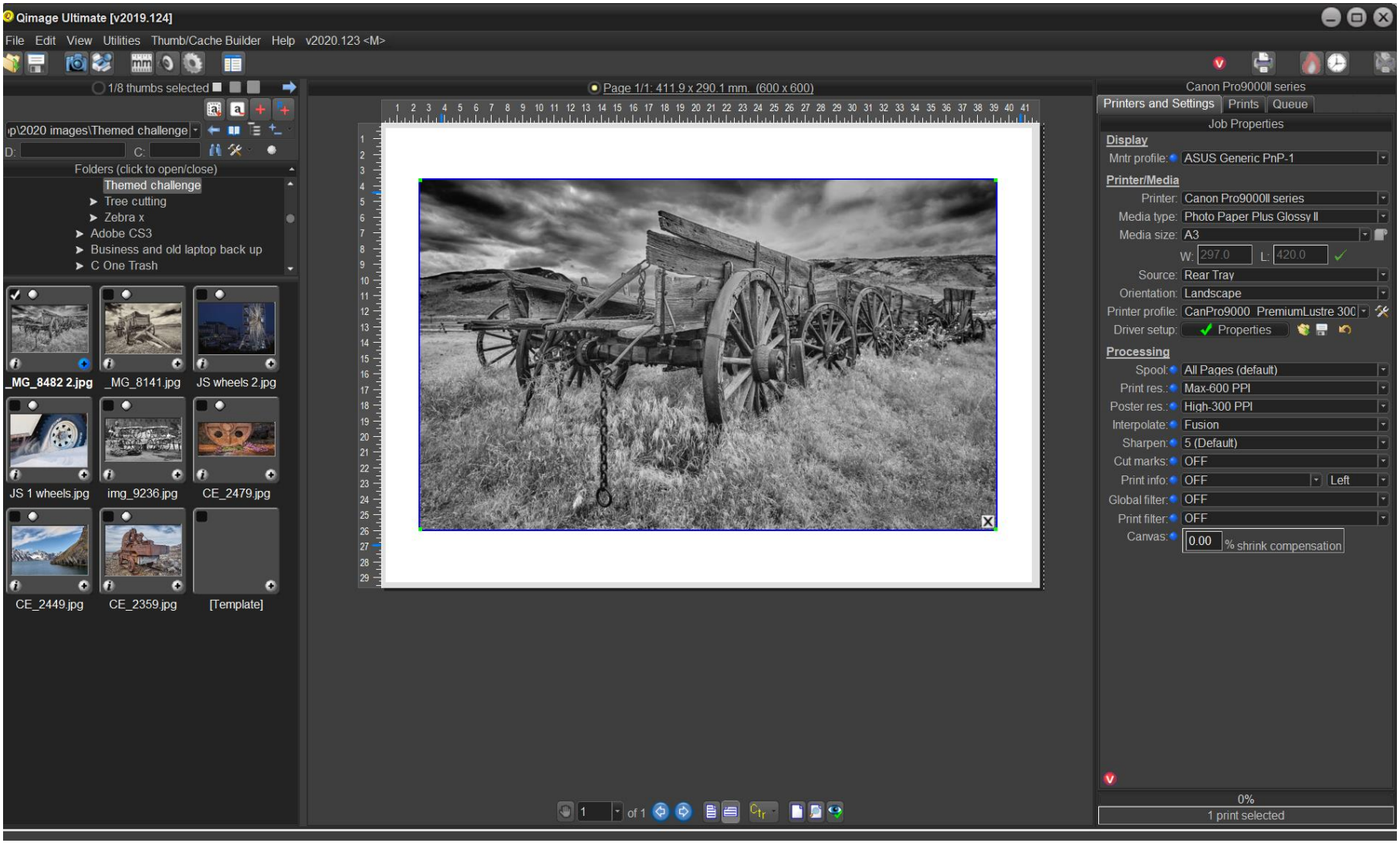
Set up will vary between software and software version and printer that are used

- File/Print
- Select printer type
- Select printer settings
  - Set paper type, quality and size
- In other options/colour management make sure that “PS manages colour” is chosen and also in printer settings switch off colour management


Print
Printer:
Canon Pro9000II se...
Copies: 1
Page Setup...
Position
Center Image
Top: 5.558
Left: 7.96
Unit: cm
Scaled Print Size
Scale to Fit Media
Scale: 100%
Height: 17.77
Width: 25.4
Unit: cm
Print Resolution: 72 PPI
Match Print Colors
Show Bounding Box
Print Selected Area
Color Management
Print
Document (Profile: Untagged RGB)
Proof (Profile: N/A)
Options
Color Handling: Photoshop Manages Colors
Did you disable color management in the printer dialog?
Printer Profile: BB Canon9000 Pinnacle Lustre.icc
Rendering Intent: Relative Colorimetric
Black Point Compensation
Proof Setup: Working CMYK
Simulate Paper Color
Simulate Black Ink
Description
Cancel
Done
Print...

PRINTING WITH QIMAGE

- An example of a specialist print programme Qimage
- http://www.ddisoftware.com/qimage-u/
- Costs around $70 (£55) but easy to use (once set up) and gives good quality prints with sophisticated options


Qimage Ultimate [v2019.124]
File Edit View Utilities Thumb/Cache Builder Help v2020.123 <M>
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Page 1/1: 411.9 x 290.1 mm. (600 x 600)
Canon Pro9000II series
Printers and Settings
Prints
Queue
Folders (click to open/close)
Themed challenge
Tree cutting
Zebra x
Adobe CS3
Business and old laptop back up
C One Trash
_MG_8482 2.jpg
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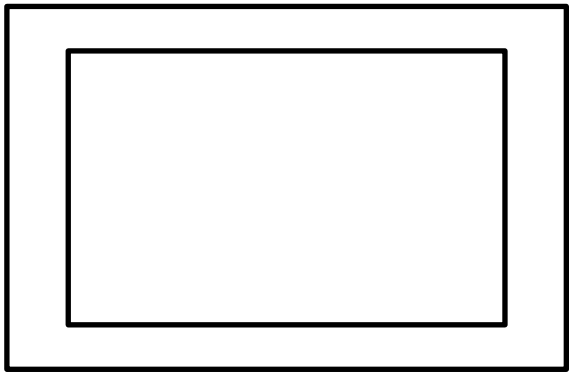
JS wheels 2.jpg
JS 1 wheels.jpg
img_9236.jpg
CE_2479.jpg
CE_2449.jpg
CE_2359.jpg
[Template]
Job Properties
Display
Mntr profile: ASUS Generic PnP-1
Printer/Media
Printer: Canon Pro9000II series
Media type: Photo Paper Plus Glossy II
Media size: A3
W: 297.0 L: 420.0
Source: Rear Tray
Orientation: Landscape
Printer profile: CanPro9000 PremiumLustre 300
Driver setup: Properties
Processing
Spool: All Pages (default)
Print res.: Max-600 PPI
Poster res.: High-300 PPI
Interpolate: Fusion
Sharpen: 5 (Default)
Cut marks: OFF
Print info: OFF Left
Global filter: OFF
Print filter: OFF
Canvas: 0.00 % shrink compensation
0%
1 print selected
1 of 1

MOUNTING

- Mounting prints depends on your taste
  - Cut-out frame (make or buy)
  - Mount directly on board
  - Borders?
- What colour? Most judges tend to prefer white or dark grey/black. But your choice!
- Think about position of image in frame - central or offset? Small or large border?



QUESTIONS AND DISCUSSION