

Photography course

(Back to basics)

Session 3 – Image output

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Aimed mainly at those members with less experience but may also act as a refresher for others

PHOTOGRAPHY COURSE (BACK TO BASICS)

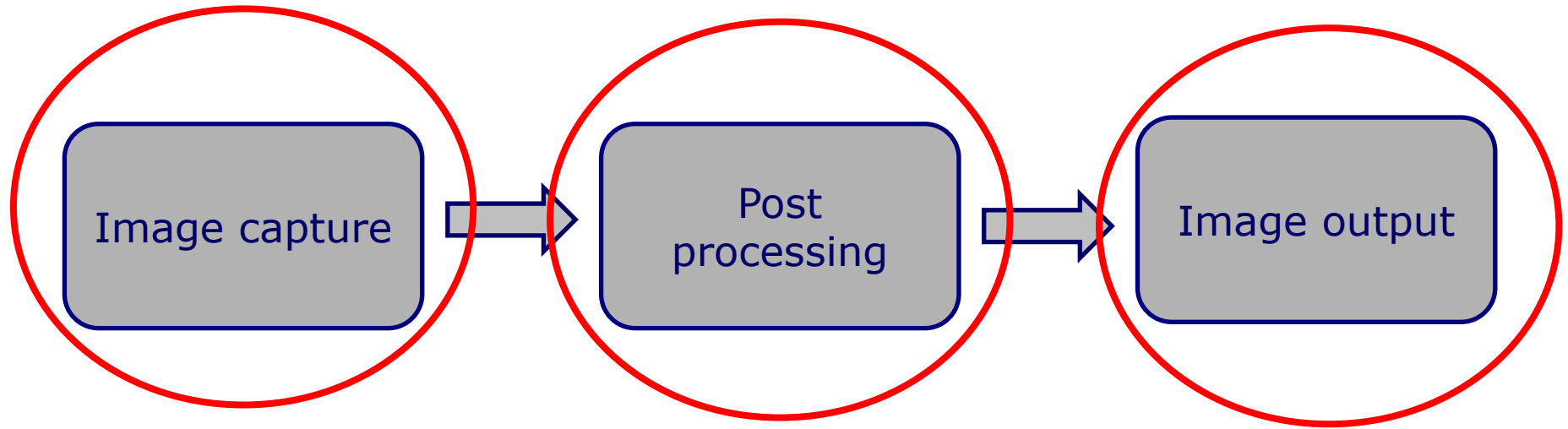
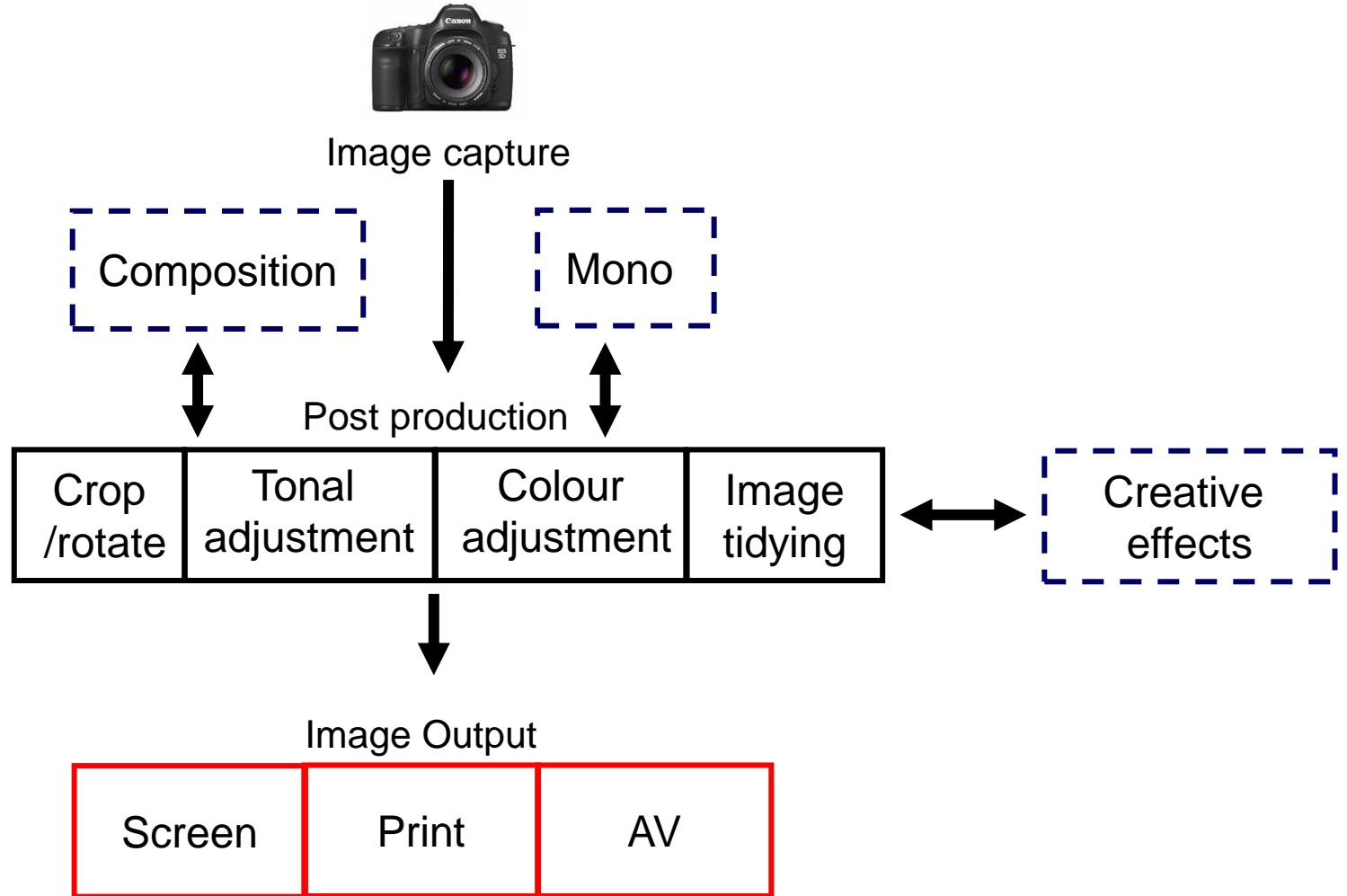



IMAGE CREATION - CAPTURE TO OUTPUT





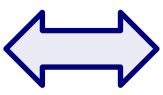
So you have spent time
adjusting your great image
to its optimum state

-

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



• Photobooks

*Check the requirements.
Usually medium sized jpegs*

Jpegs at screen resolution




• Projected image
• AV slide show

Low quality Jpegs



• Web/tablet/phone

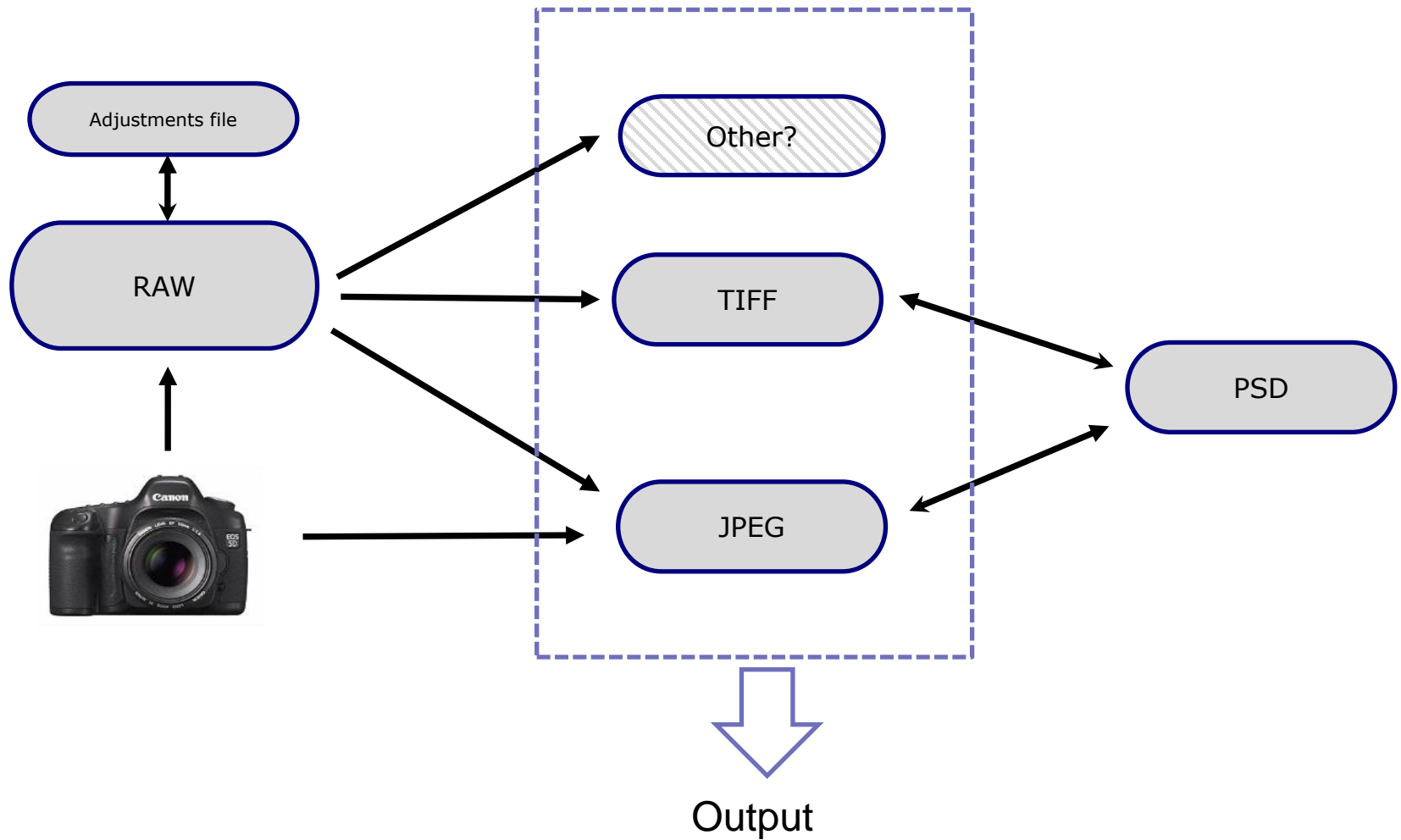


Right file type for right
purpose

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

FILE TYPE LINKS



RAW FILE FLEXIBILITY

One Raw Image Can Be Processed in an Infinite Number of Ways:

Think of your raw capture as your digital negative. It never changes, but it can be processed any number of different ways.



Tuned for Web



Tuned for Print



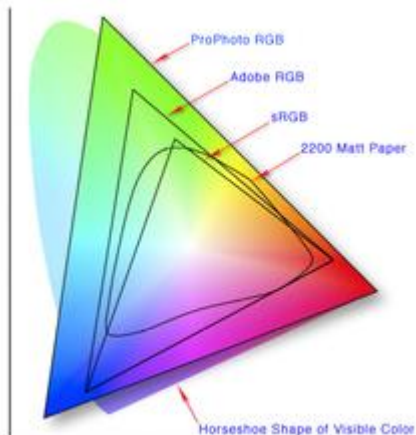
Converted to B&W




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

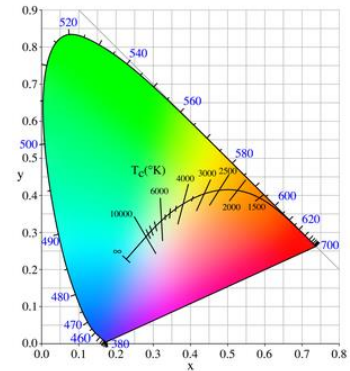


Getting the colour right:
profiles and calibration

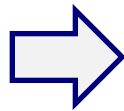
COLOUR PROFILES

- 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



Monitor profile sets
"standard" colour
reproduction

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

Adjust colour in
editing software

Projector profile 1
Projector tries to match
image profile

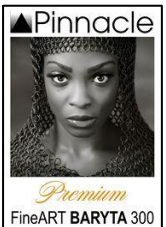


Paper profile 1

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



Paper profile 2

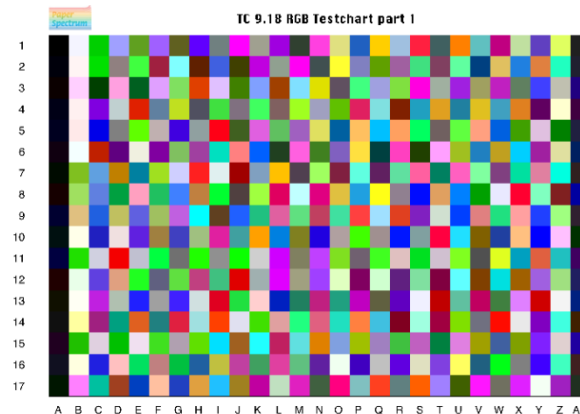


Paper profile 2

Commercial
print service

MINIMUM RECOMMENDED

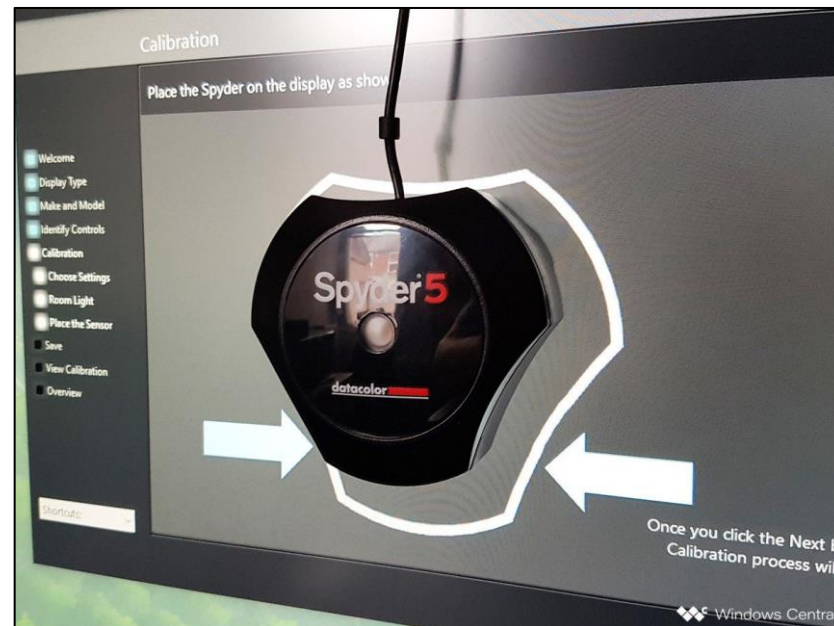
- Colour profiling
 - Monitor
 - Buy or borrow profiling device
 - Make sure position and lighting good when setting up
 - Printer/paper
 - Can download free “standard” profiles for some papers
 - Best - use specialist service (free or small cost)
- Best to standardise on a few papers you like
- Make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



WHAT ARE ICC PROFILES

The screenshot shows a Windows File Explorer window with the address bar set to `This PC > Local Disk (C:) > Windows > System32 > spool > drivers > color`. The left sidebar shows the navigation pane with 'Local Disk (C:)' selected, and a sub-folder 'color' expanded. The main pane displays a list of files, all of which are ICC Profiles. The list includes various profiles such as AdobeRGB1998, ASUS Generic PnP-1, and several Canon and CanPro profiles. The columns shown are Name, Date modified, Type, and Size.

| Name | Date modified | Type | Size |
|---|------------------|-------------|----------|
| AdobeRGB1998 | 21/08/2019 13:56 | ICC Profile | 1 KB |
| ASUS Generic PnP-1 | 21/08/2019 13:56 | ICC Profile | 11 KB |
| BB Canon9000 Photo Carton | 21/02/2015 12:29 | ICC Profile | 1,748 KB |
| BB Canon9000 PINN_FABARYTA_CAN900... | 17/01/2016 16:38 | ICC Profile | 882 KB |
| BB Canon9000 Pinnacle Gloss | 21/02/2015 12:30 | ICC Profile | 1,749 KB |
| BB Canon9000 Pinnacle Lustre | 21/02/2015 12:30 | ICC Profile | 1,749 KB |
| CanPro9000_FineArtBaryta 300_09-08-201... | 17/08/2018 15:22 | ICC Profile | 882 KB |
| CanPro9000_PinVelvetFineArt_09-08-2018... | 17/08/2018 15:22 | ICC Profile | 882 KB |
| CanPro9000_PremiumLustre 300_09-08-2... | 17/08/2018 15:22 | ICC Profile | 882 KB |
| CNB9TCA0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9TCB0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9TCC0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9TDA0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9THA0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9TIA0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9TJA0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9TKA0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9TKC0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9TLA0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9TMA0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9TMC0 | 03/12/2013 00:21 | ICC Profile | 322 KB |
| CNB9TNA0 | 03/12/2013 00:21 | ICC Profile | 322 KB |




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)
 - Good quality photo projector (1600x 1200 pixels)
- Often projected images benefit from frame or border around

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” on new layer and then merge
- 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

CREATING DIGITAL PANELS

- Set up a blank image at the right pixel ratio
- Open up your panel images and drag/drop or copy/paste onto background
- Move to the right position
- Add border if needed
- Check and flatten image when finalised





Audio Visual (AV) output

WHY AV?

- AVs are a great way to show your images to yourself, family and friends
- Can be used for holidays, short trips, family events or just some nice pictures
- Images do not have to be competition winners
- Music and other sound effects can significantly add to the enjoyment of the images
- Simple AVs are easy to produce and are often a better way to show your pictures than albums, photobooks or images on your smartphone
- AVs can be formatted for any output media-TV, PC, tablet, web, u-tube, Facebook

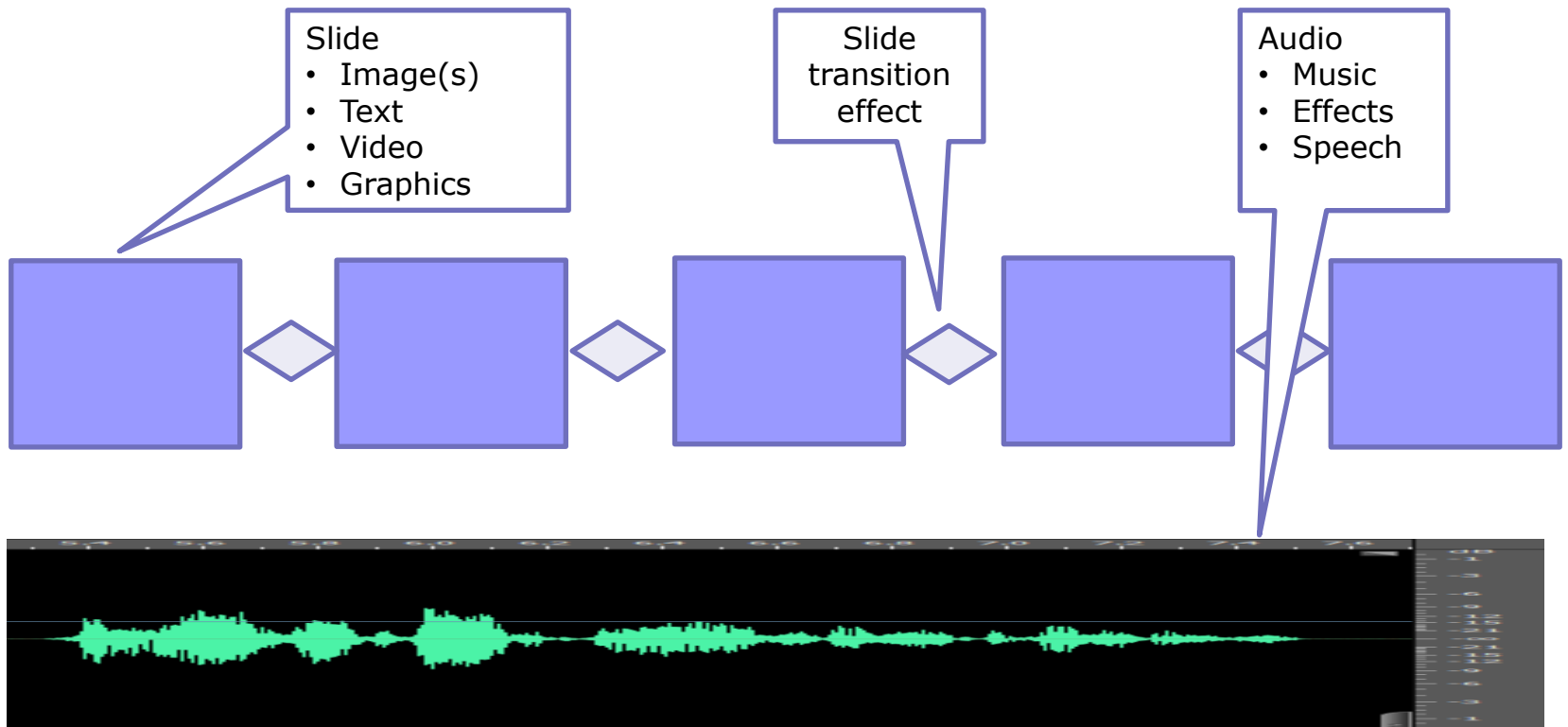
WHAT IS AV (AUDIO VISUAL)?

- **Images**: stills/video/captions/graphics

*Coupled creatively
with*

- **Sound**: music/voice/sound effects

THE BASICS OF AV



AV PROGRAMMES

- Most common with AV workers
 - P2E (www.wnsoft.com)
 - \$75 (~£55 download)
- Can use many others
 - Some free software provides good basic functions
 - MAC's have alternative options

PLANNING YOUR AV

- If part of holiday or family event think about taking a few scene setting images at the time
 - Place names and/or iconic sights
 - Dramatic opening/closing slides
- Make it interesting for others
 - Set the scene
 - Try to create story for viewers
 - Avoid cliches or self evident comments
 - Not too long (between 5 and no more than 25 min)
- Can get lots of useful (often copyright free) additional information (maps/graphics) off internet
- Music and sound can make the AV
 - If abroad buy local music
 - Buy selected tracks off i-tunes
 - Get free or buy sound effects from web

COPYRIGHT

- Copyright of music or other material used in your AV is a minefield
- Unlikely to be a problem if used for family or strictly private purposes but be very careful if AV used for public or quasi commercial purpose
- Can use copyright free sites for music as long as not for commercial use
- Institute of Amateur Cinematographers has lots of useful information including a licence (£8) which helps to protect you

www.theiac.org.uk

BASIC APPROACH

- Work out a rough outline for your AV e.g.
 - What theme
 - How many and which slides
 - Slide/show durations
 - Can also insert video clips
- Load images/video into AV programme in correct sequence - adjust as necessary
- Decide on transitions and other effects
- Add intro and ending slides plus text where necessary
- Add music matched to slides and transitions
- Once slide show finished leave a for a few days and then review to check
 - Transitions
 - Music sync
 - Does the story work overall
- Output usually as MP4 with various options available e.g. quality, aspect ratio


PREPARING IMAGES

- Best to use lowish resolution jpeg since reduces file size and thus AV processing time
- Think about final output aspect ratio
 - Ideally pixel resolution should match screen size of TV/monitor/projector
 - Higher pixels will work but AV file size higher
 - Most TVs now 16/9
 - Society projector 4/3

ADDING AUDIO

- Music or other audio adds greatly to the show
- Can use music from any digital source. Also can often find (or buy) sound effects/news clips on line
- Needs some practice to achieve good alignment with slide transitions
- Can easily edit track to align with images:
 - Change start/finish point of track
 - Move track to better align with images
 - Fade in and out
 - Make louder or softer
- Can run sound clips over music





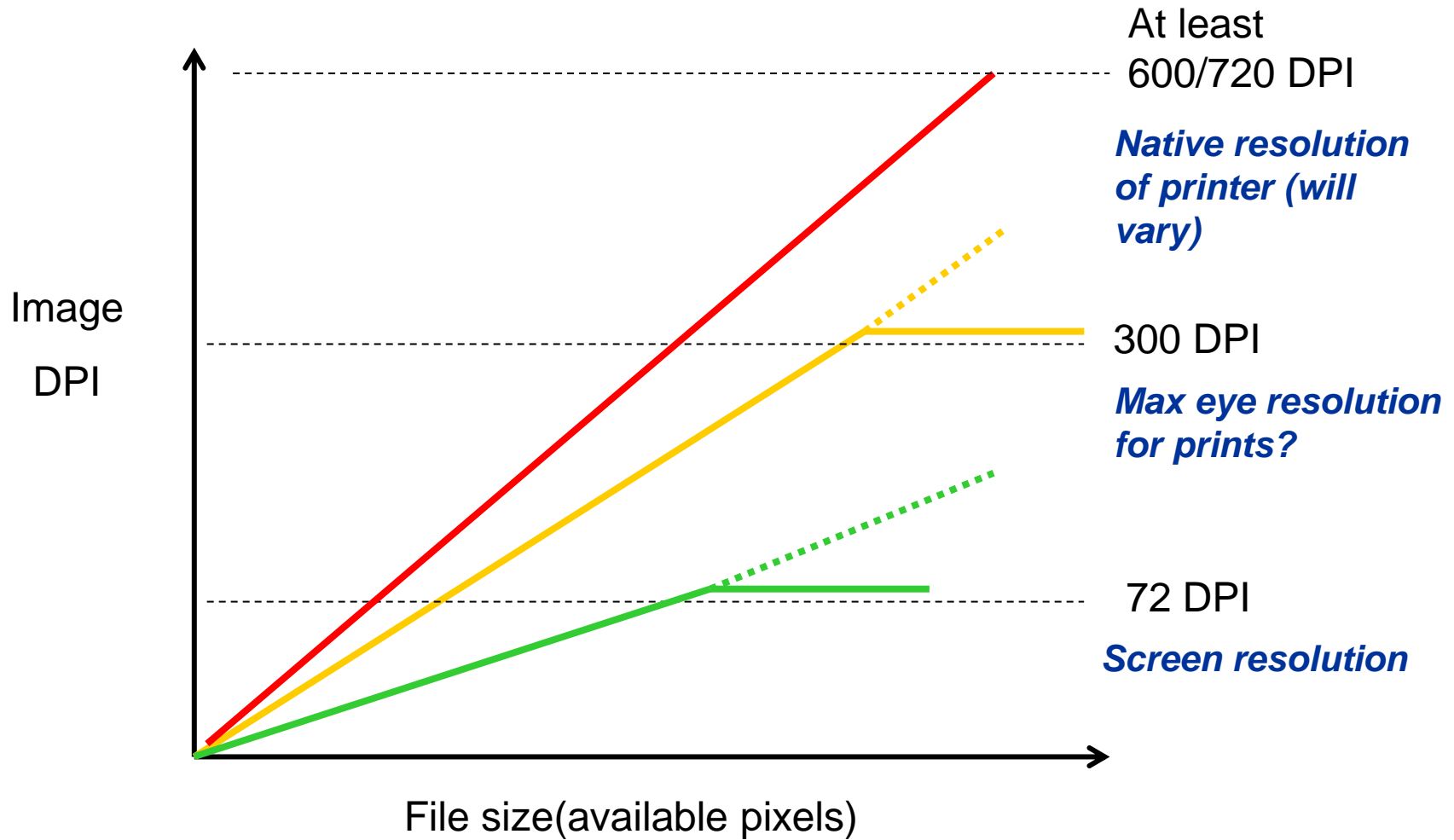
Printing and printing software

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

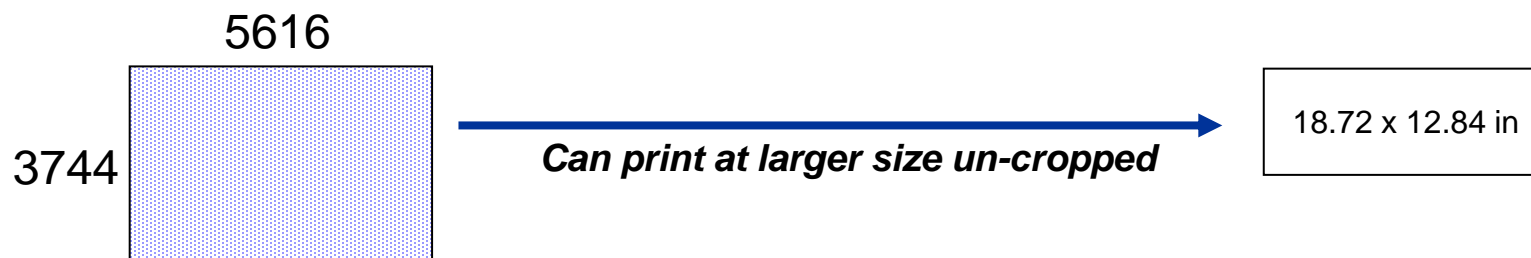
DPI AND FILE SIZE



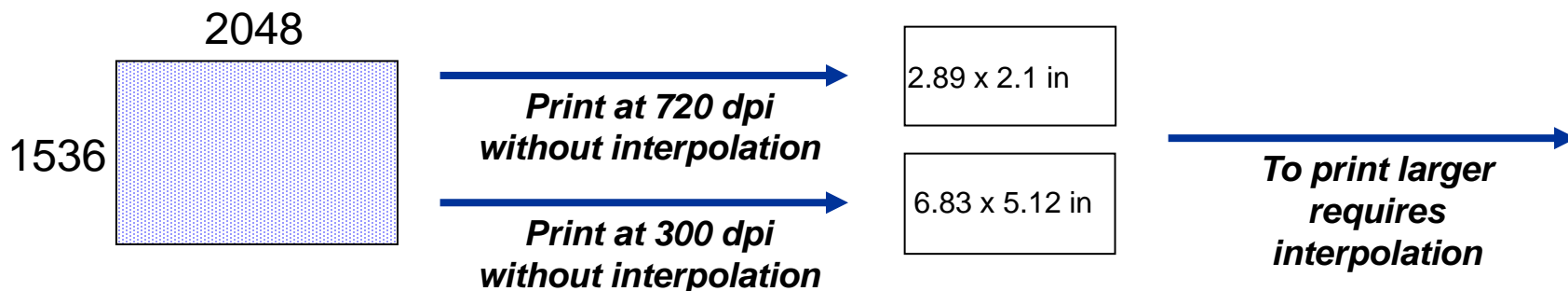
For many decent sized prints there may not be enough pixels so software has to create extra ones (interpolate)

AN EXAMPLE

23 Mp full frame camera



Heavily cropped 3Mp image



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



Zoom (no interpolation)



CS5 bicubic smoother



QU - Hybrid



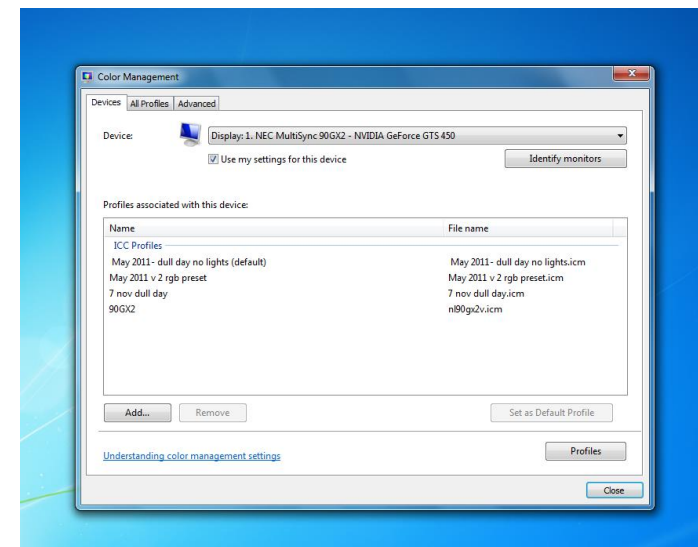
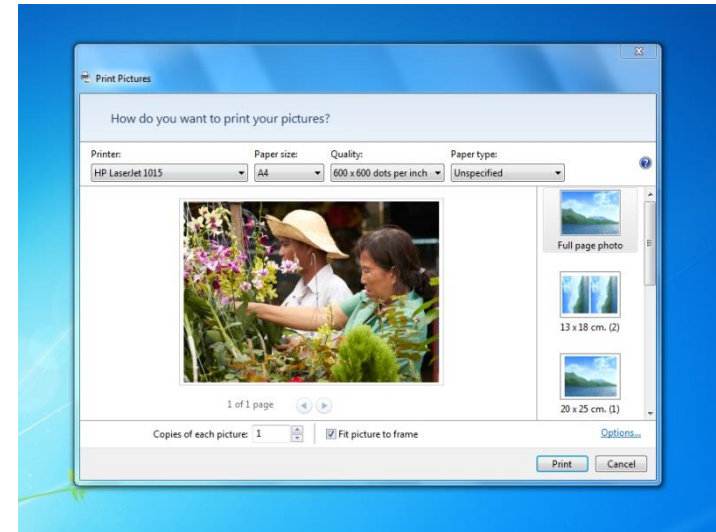
QU - Fusion (new)



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

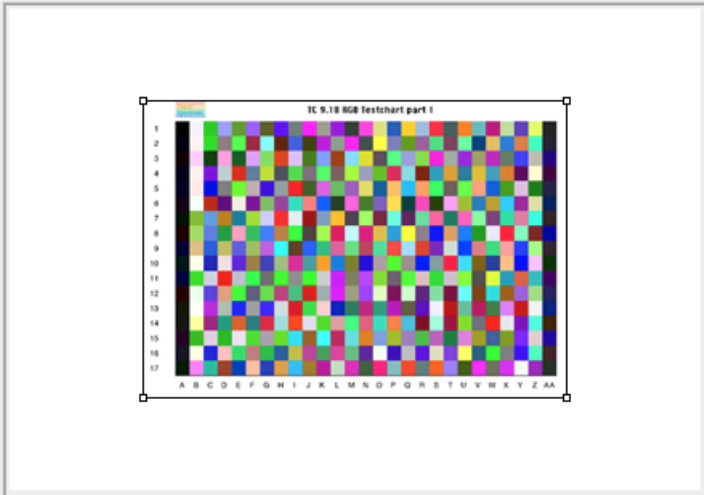
Set up will vary between software and software version and printer that are used

- 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

X



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

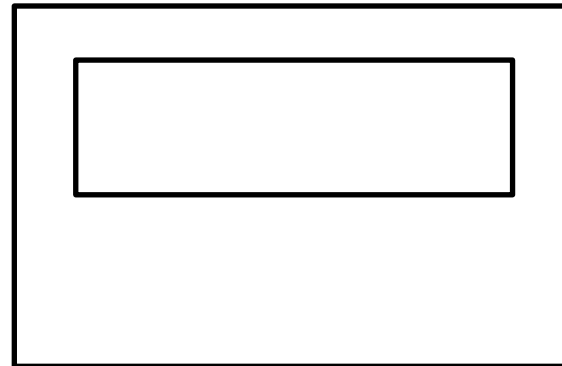
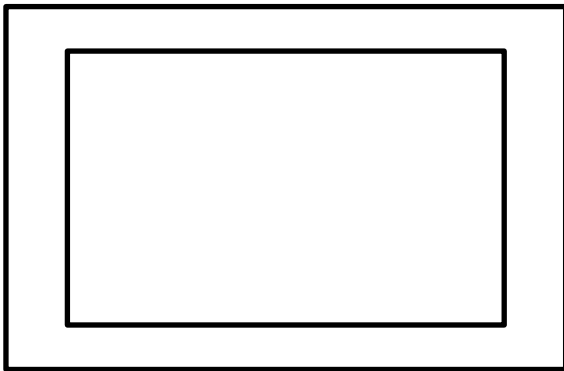
- An example of a specialist print programme Qimage
- <http://www.ddisoftware.com/qimage-u/>
- Costs around \$70+ (£55) but easy to use (once set up) and gives good quality prints with sophisticated options





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?



TO SHARPEN OR NOT TO SHARPEN

- Before final output it is possible if you wish to “sharpen” the image
- Effectively adds local contrast at edges between pixel boundaries
- However be very careful not to oversharpen which can easily create nasty halos around objects in the image
- Best to make sure image is sharp at point of capture and then rely on default (built in) sharpening within your processing software
- If necessary selectively (and carefully) sharpen key aspects of the image (e.g. eyes)

Some specialist software now claims very high quality sharpening using AI, but up to you to decide if worth it



FINAL QUESTIONS AND DISCUSSION



THINGS TO TRY AFTER THE WORKSHOP

1. Review material from this session
2. Look at your workflow and file types to see whether it can be improved depending on different outputs
3. If accurate colour needed think about colour profiling for screen and printer
4. Have a go at AV for fun



Hope you found the course
useful?

Where from here?

