

## PART 1 MONITOR CALIBRATION

### What is Monitor Calibration?

Monitor calibration is the process of measuring and adjusting the colours on your monitor to a International Standard.

### Why is it important to Calibrate my Monitor as a Photographer?

Every display device has a different technology in manufacturing, and thus every screen will display the same image differently. Most photographers at one time have had a situation where they have looked at their image on a different display device or print and said "but it doesn't look like that on my monitor". Suppose as a photographer if your monitor is too warm, cold, light or dark you will compensate for that within your post processing, and since your monitor is not calibrated to a Common Standard the results you will get from your prints will differ and sometimes quite drastically.

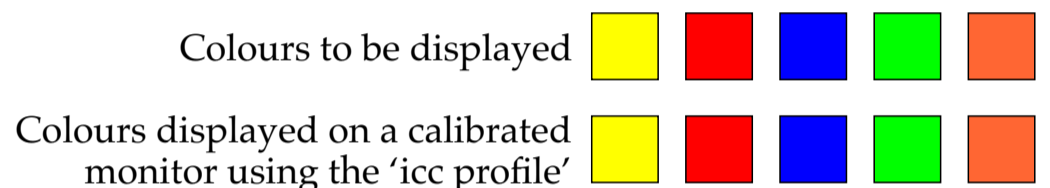
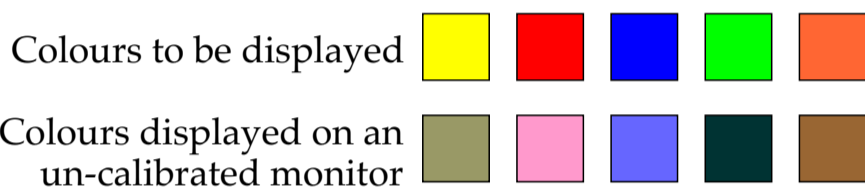
All professional printers are calibrated to the Common Standard, so if you either sell your prints or plan to sell them in the future, monitor calibration should be part of your standard routine. (Tip - All monitors should be calibrated at least once in 6 months)

### At what stage should I calibrate my monitor?

Let us take for example that you have been doing photography for 2 years and within that time you have built up a library of 5000 images. These have all been post processed on an un-calibrated monitor, you then decide to have your monitor calibrated you will most likely have to revisit all the 5000 images and re-correct a large number of them.

### What does Monitor Calibration do to my monitor?

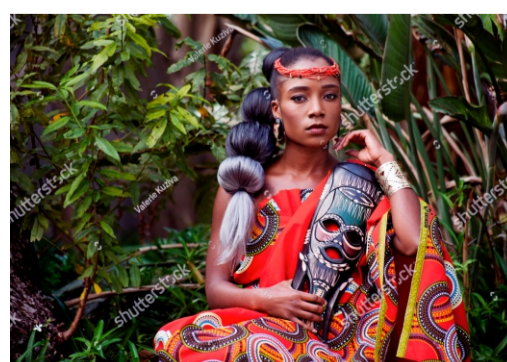
During monitor calibration an 'icc profile' is created which then tells the monitor how to display a certain colour eg:



I have along with this posted 6 more files as below for a quick identification of whether your monitor requires calibration. Download all 6 files and view all of them on your post processing software. Should you find any of the other besides the one that is marked correct to you on your monitor then your monitor is in need of calibration.

### PLEASE NOTE:

By adjusting your monitor colours to make the one labeled correct look the best does **NOT** mean that you have now calibrated your monitor. Monitor calibration ideally requires 461 different colour patches that get tested and optimised and the information incorporated into the icc profile.



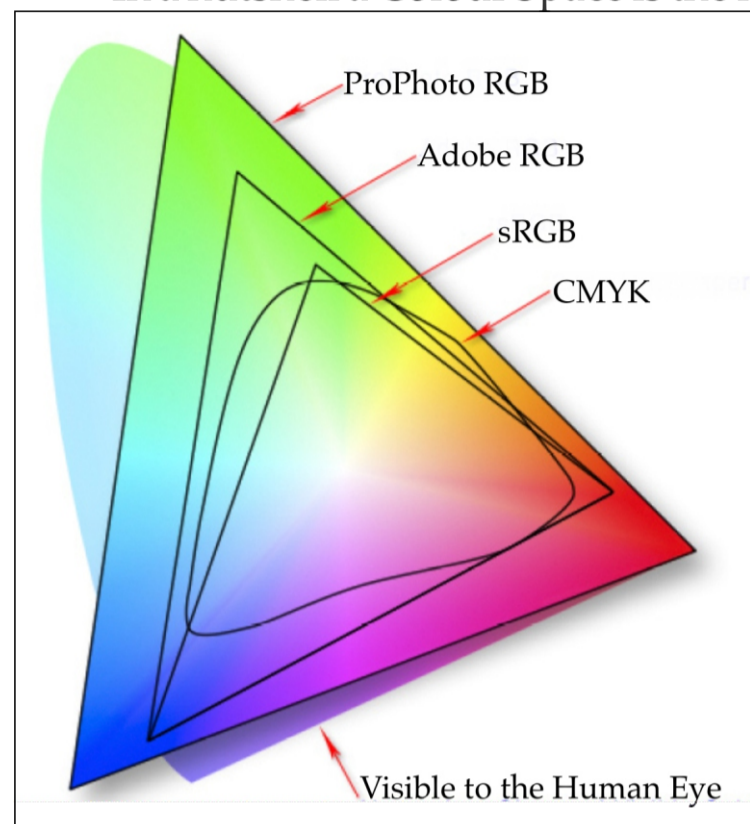
# GUIDELINES TO ACHIEVING BETTER PHOTOGRAPHIC PRINTS

## PART 2 COLOUR SPACES & ICC PROFILES

The monitor is now calibrated, so what's next? We now move on to understanding Colour Spaces and icc Profiles and what part they play in photography.

### What is a Colour Space?

In a nutshell a Colour Space is the limitation of colours any device (*I am considering our eye as a device for ease of understanding*) can identify or represent. This is what is referred to as a 'Colour Gamut'. The image below will give you what different colour spaces represent compared to what our human eye is capable of seeing.



### How do I shoot in the Biggest Colour Space?

The first question most photographers will ask... 'My camera only allows me to shoot in Adobe RGB or sRGB how will I ever get the colours represented by ProPhoto RGB?'. The answer is simple shoot in RAW, as the name suggests the RAW file consists of raw data and no Colour Space is assigned to it. On the camera Colour Space is only assigned to jpeg or tiff files.

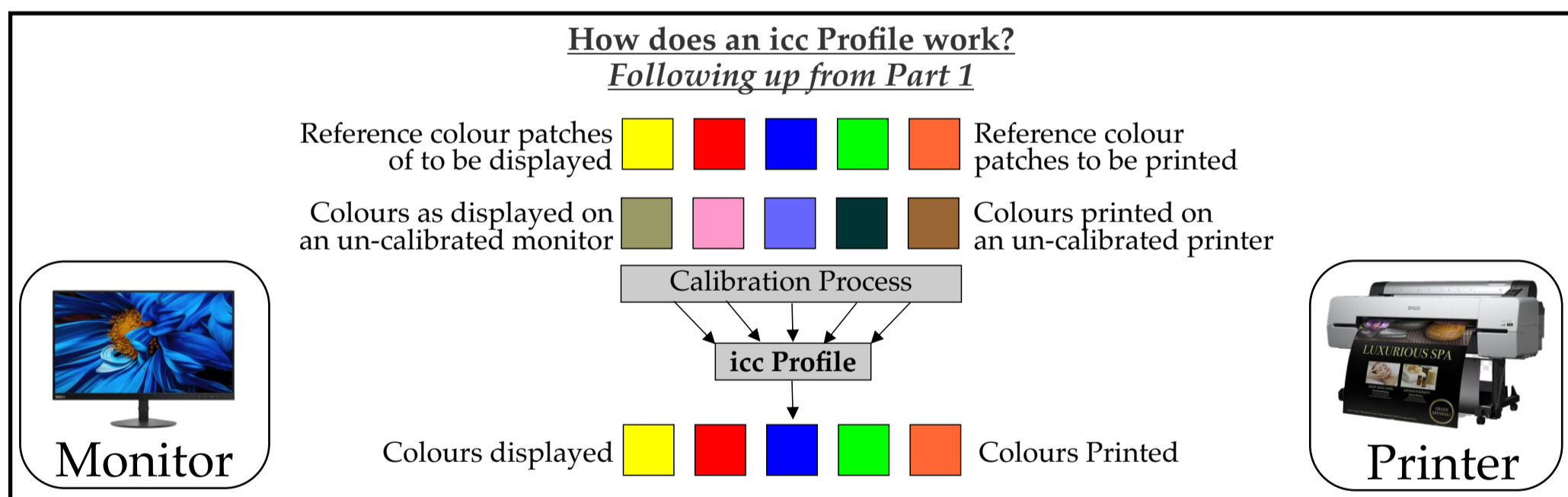
Adobe Lightroom today operates in ProPhoto RGB and as you import your RAW images into lightroom the Colour Space set is ProPhoto RGB, so all your post processing work within lightroom is being done in the biggest Colour Space. (*Tip for Digital Artists - Always have your canvas set to RGB*)

### Why is an icc Profile important?

Simply put every device that displays (*Monitor/Projector*) or captures (*Printing Media*) colour can and should be profiled. These profiles define the Colour Gamut that the device is **able** to achieve (*Transmission in the case of display devices and Reflective in the case of printers*).

### How does an icc Profile work?

*Following up from Part 1*



Once a monitor and printer have been calibrated and an icc profile is created for each, these profiles now send information from one device to the other through a set of tables incorporated in their icc Profiles.



This has been a very challenging topic to simplify, I trust that this creates a simplified version of a very complex topic.

*In the next topic will be visiting:*  
**COLOUR MANAGEMENT**

# GUIDELINES TO ACHIEVING BETTER PHOTOGRAPHIC PRINTS

## PART 3 COLOUR MANAGEMENT

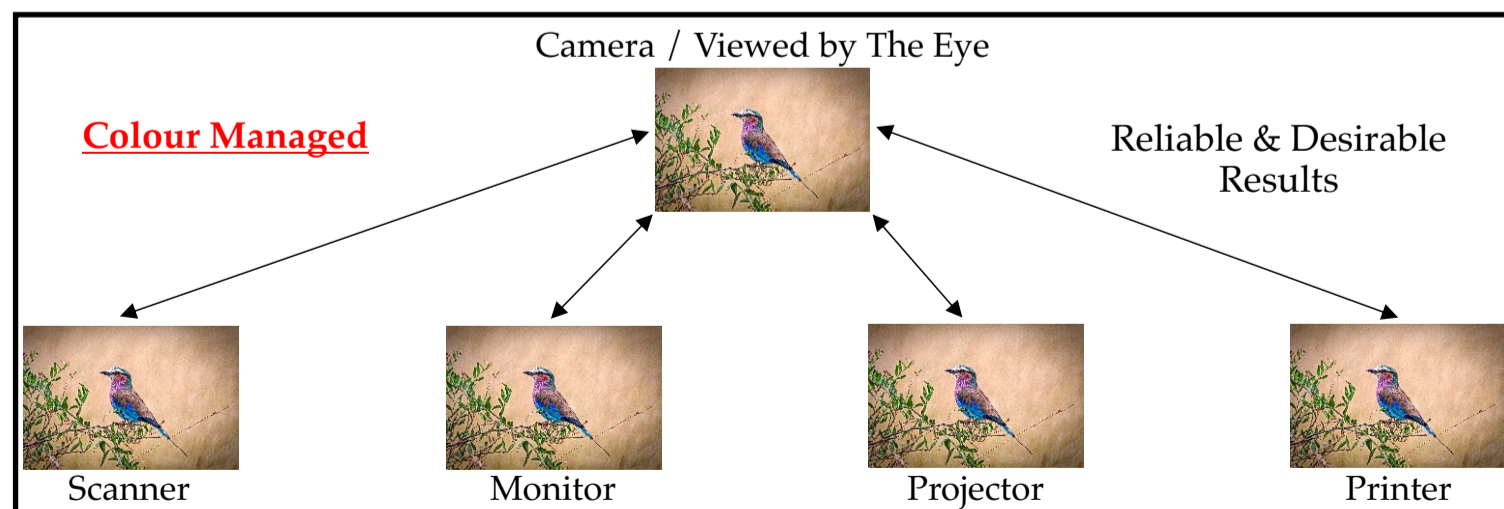
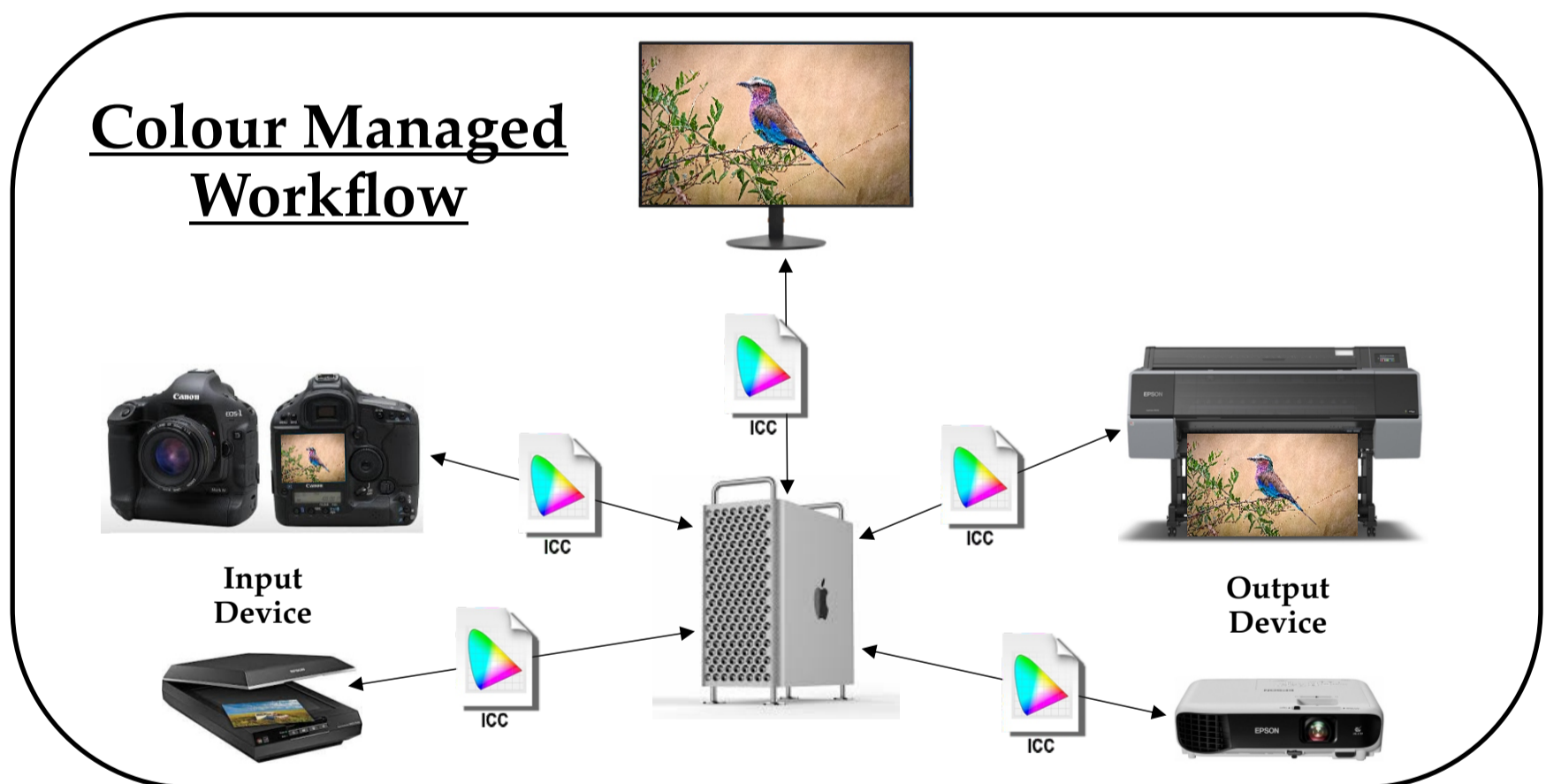
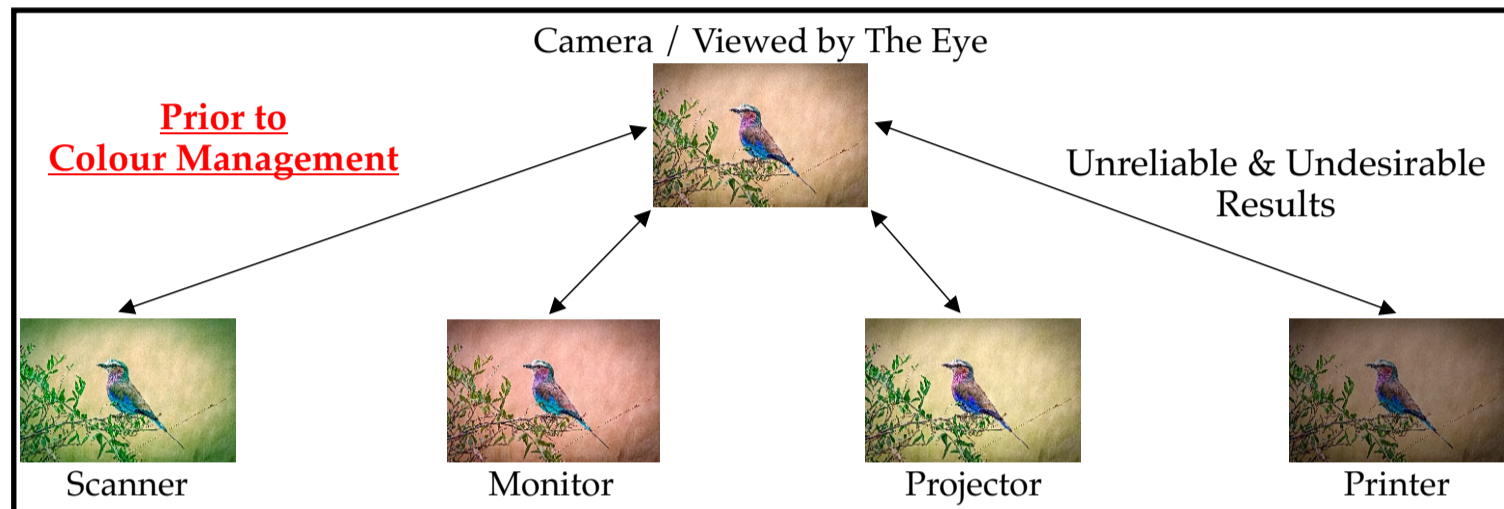
Now that we have an understanding of Colour Spaces and icc Profiles, on to Colour Management, how it works and why it is important.

### What is a Colour Management?

Colour Management is the process of controlling the way colours are represented across various devices for example Camera, Scanner, Monitor, Projector and Printer etc. to achieve consistent and predictable results.

### Why is Colour Management Important in the Digital Workflow?

All photographers, digital artists etc. strive to have predictable results from beginning to end of their workflow. The best way to explain this is by the visual explanation below.



It is said that 'A Picture is worth a Thousand Words' so I have this time minimised the words and used mainly visuals hoping this will be better understood.

The last topic we will be visiting in this series is:  
**USING MEDIA PROFILES IN LIGHTROOM**

# GUIDELINES TO ACHIEVING BETTER PHOTOGRAPHIC PRINTS

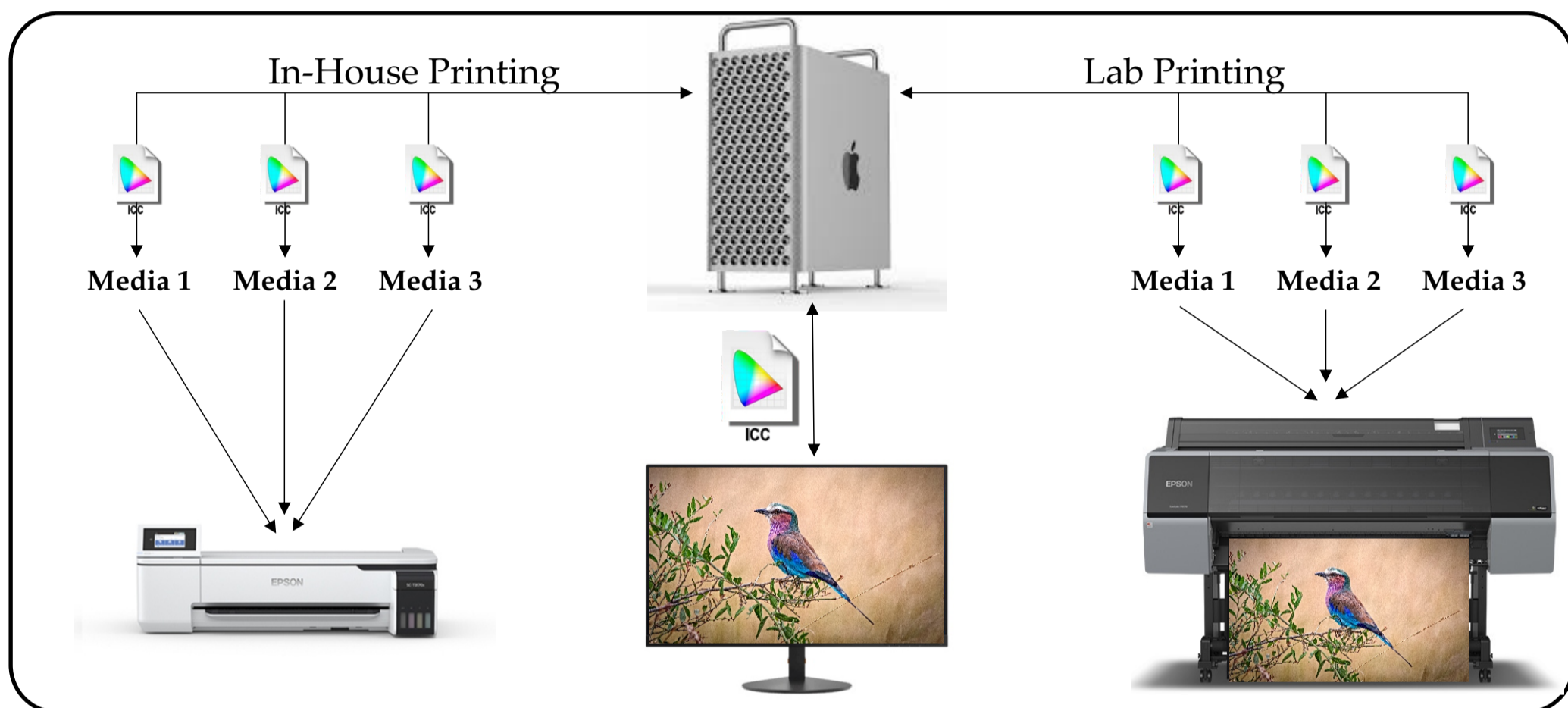
## PART 4

## USING ICC PROFILES IN ADOBE LIGHTROOM

We now have a calibrated monitor, have a good understanding of Colour Spaces and setup a Colour Managed Workflow. As a photographer you have done everything possible to ensure that you get optimum and reliable results in printing your images.....unless of course you print in-house then you still have one more step to ensure is correct.

### What is a Printer Profile?

While this is referred to as a 'Printer Profile', in essence it is a 'Printer & Media Profile'. Each media has different properties, Paper White, Ink Absorption etc. therefore each media has to be profiled individually with the printer in use to achieve the best results possible. (Note: Two printers of the exact same model will lay down ink on the media slightly differently, therefore it is imperative to custom profile each printer along with the appropriate media.) Most 'Professional Photo Labs' will have icc profiles for their printer(s) married to the different media(s) they offer, and in most cases are available on request to their clients. For those who do their own 'In-House Printing' most media suppliers will offer icc profiles for their media, these are mainly considered as 'Generic' and they will give you satisfactory results but are not a replacement for a 'Custom Profile'.



### How does one use these Printer Profiles in Adobe Lightroom?

Once the image is opened in the 'Develop Module' of Adobe Lightroom, there is a checkbox 'Soft Proofing' at the bottom left of the screen which once checked, will change the 'Histogram' dialogue box on the top right to a 'Soft Proofing' dialogue box.

Once a custom profile has been made or you have received the profiles from the lab that you work with, they need to be installed into a specific folder which will allow Adobe Lightroom to see them.

In the 'Profile' list you will now be able to see all the different media profiles that have been installed. Once a media is selected, the image will change and this will give you a better representation of how the image will print on that specific media, it will also show you what clipping may occur if some of the colours are out of the media's gamut.

Please download the images within this post as they will allow you to see visually what I have explained above.

With this last part we come to the end of how to achieve the best prints possible of your images.

I hope and trust this has been helpful, should there be a topic regarding Colour, Colour Management or Printing that you would like to have more information on please do let me know.

**Shoot, Shoot, Shoot.....Print, Print, Print.**