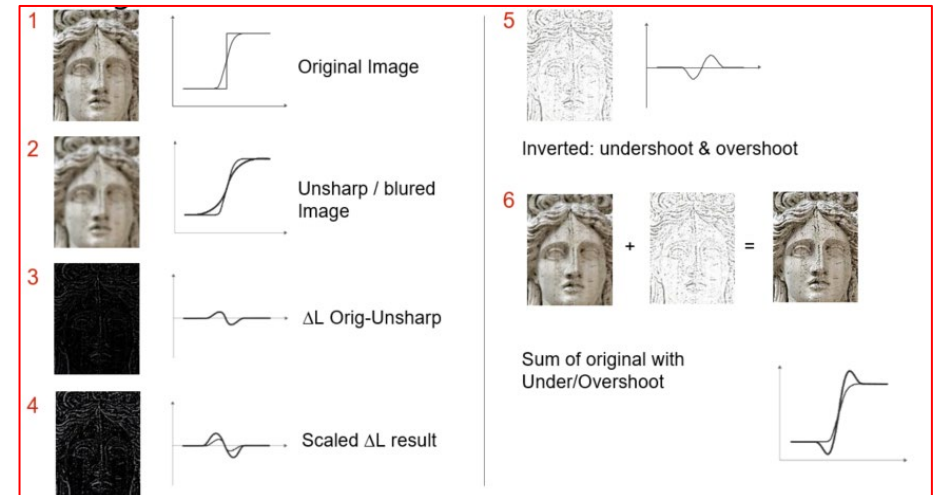


This tutorial explains how to make use of the image enhancement tools of apogee preflight action lists from IntelliTune. With Asanti 5.1, three IntelliTune action lists are available:

- ap_Perceptual Unsharp Masking: to increase the visual sharpness of an image;
- ap_Edge Preserving Smoothing: to smooth noisy images while still preserving the edges in an image;
- ap_Skin Tone correction: to correct the skin tone colors of images towards more natural skin tones.

1. Perceptual Unsharp masking

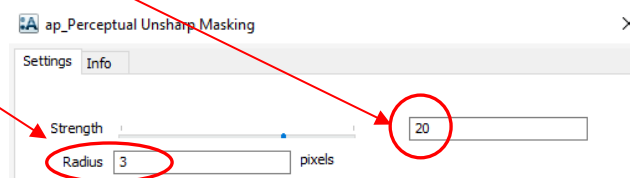
- Preflight action to increase the visual sharpness of an image.
- USM is a digital modification of image pixels that mimics how the human eye reacts to edges of contrast changes.
- USM creates a slightly blurred copy of the image in the background, this copy is subtracted from the original, resulting in a mask of positive and negative values describing the edges.
- This digital mask, applied to the original image, increases the contrast around the edges.



To avoid unwanted visual effects, Perceptual USM is based on the lightness channel and implemented in such a way that per pixel hue is preserved.

Strength: Magnitude of USM, may change from -100 to 100. A negative value "will smooth the image, for a positive value the image is sharpened. If the value is zero, no sharpening or smoothing is applied.

The **Radius** value: defines the amount of pixels that are taken into account when the algorithm is applied. The larger the value for Radius, the more large edges are sharpened whereas small edges are less sharpened or even slightly smoothed.



Additionally, **noise** and **skin tones** can be protected from USM.

The algorithm will analyze the image on noise and edge behavior, as well as certain skin tone (memory colors) color ranges, and will adapt its setting so that these image parts will not be sharpened.

- Protect skintones
- Don't sharpen noise

Exercise 1a creating a reference job without USM

1. Create a new Wide Format Job,
2. In the product pane add the "Leeuw-4-USM"
3. Click the "Create preview" button
4. Place the product on the press sheet.
5. Submit with "make and hold" and name the job "Leeuw No USM"

Exercise 1b using ap_Perceptual Unsharp Masking

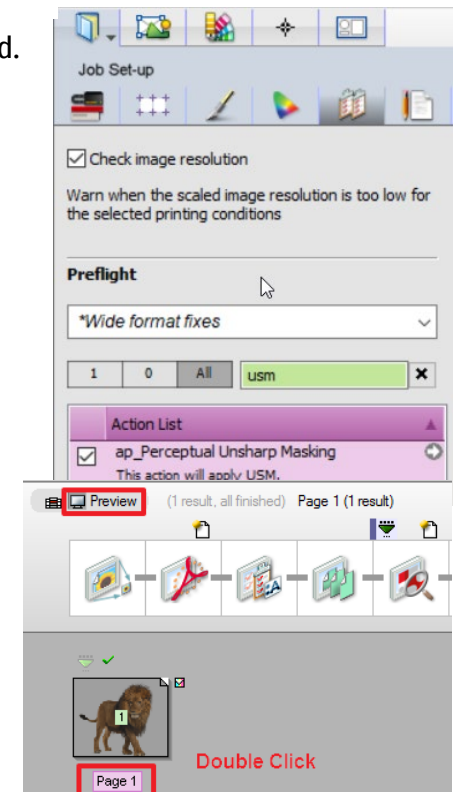
6. Duplicate the previous job and activate the Preflight panel of the job inspector.
7. Filter on USM and activate the "Ap_perceptual Unsharp Masking" actionlist.
8. Click the "Apply changes" button and consecutively the "Create Preview" button.
9. Submit with "make and hold" and name the job "Leeuw with USM"

Exercise 1c modifying the ap_Perceptual Unsharp Masking settings

10. Duplicate the previous job and activate the Preflight panel of the job inspector.
11. Click on the arrow next to the USM action list and change the strength to a lower value eg from 20 >10 and the kernel size from 3 to 10.
12. Click the "Apply changes" button and consecutively the "Generate Preview" button.
13. Submit with "make and hold" and name the job for example "Leeuw with modified USM".

Compare the rendered preview result

14. In the job list select the job without USM and click on the preview flow icon.
15. Double click the label underneath the thumbnail which will open the Rendered preview result of the job without USM applied.
16. Do the same for the 2 jobs with USM and place the windows next to each other... when looking carefully (e.g. with zoom level 2x) the effect of USM is clearly visible.
17. Close all preview windows to finish the exercise.



2. Edge preserving smoothing

Edge Preserving Smoothing (EPS) is a new operation to smooth noise while preserving the edges in the image as good as possible.

Kernel value: ranges from 1 to 51. Defines the amount of pixels that are taken into account when the algorithm is applied.

A Kernel of 5 results in a filter size of $5 \times 5 = 25$ pixels.

Exercise 2a creating a reference job without EPS

1. Create a new Wide Format Job
2. In the product pane add the "Castle-4-EPS.jpg"
3. Click the "Generate preview" button
4. Place the product on the presssheet.
5. Submit with "hold" and name the job "Castle No EPS"

Exercise 2b using ap_Edge Preserving Smoothing

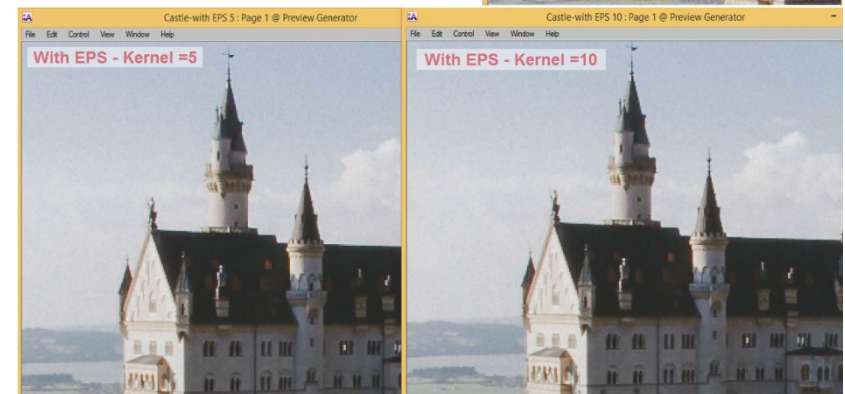
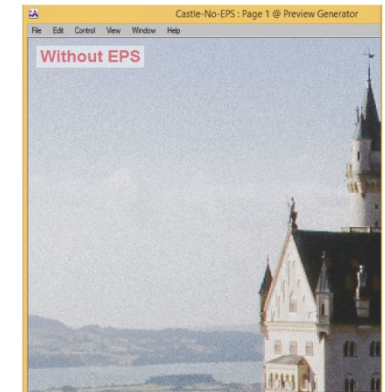
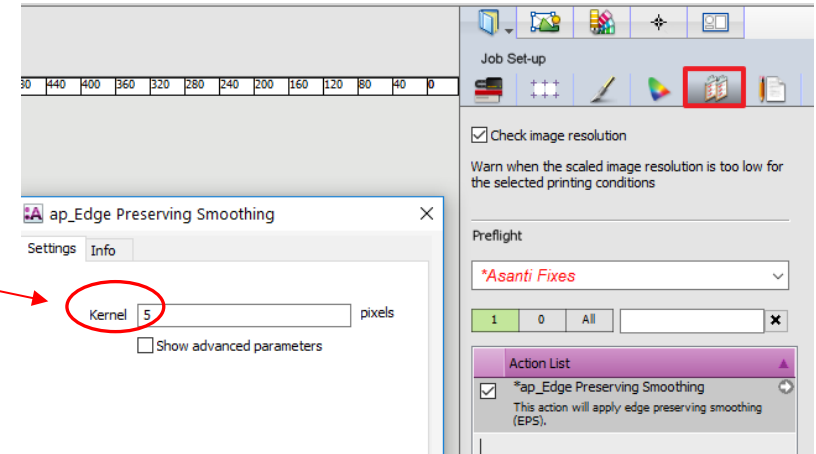
6. Duplicate the previous job and activate the Preflight panel of the job inspector.
7. Filter on EPS and activate the "Ap_Edge Preserving Smoothing" action list
8. Click the "Apply changes" button and consecutively the "Generate Preview" button.
9. Submit with "hold" and name the job "Castle with EPS"

Exercise 2c modifying the EPS settings

10. Duplicate the previous job and activate the Preflight panel of the job inspector.
11. Click on the arrow next to the EPS action list and change the kernel size to a higher value eg from $5 > 10$.
12. Click the "Apply changes" button and consecutively the "Generate Preview" button.
13. Submit with "make and hold" and name the job for example "Castle with modified EPS".

Compare the rendered preview results.

14. In the job list select the job without EPS and click on the preview icon.
15. Double click the label underneath the thumbnail which will open the Rendered preview result of the job without EPS applied.
16. Do the same for the 2 jobs with EPS and place the windows next to each other ... when looking carefully the effect of EPS is clearly visible
17. Close all preview windows to finish the exercise.

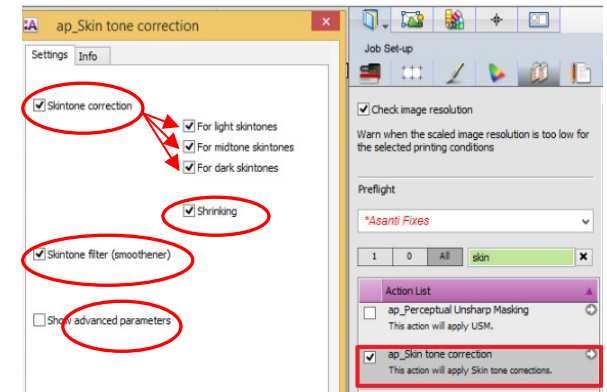


3. Skin Tone correction

Skin colors, also known as "Memory Colors" are easily judged as unnatural if something is slightly wrong. The action list *ap_Skin Tone Correction* contains a **detection and a correction filter**. Both filters offer **3 skin tones areas: Light; Midtone and Dark**. Enabling the **Shrinking** option allows less variation of a skin tone, unwanted yellowish or reddish parts in skin tone colors can be smoothed.

Skintone filter (smoother) is a comprehensive filter that automatically removes skin imperfections and smoothens the skin while preserving all detail that is important like hair, mouth, eyebrows etc. Filter Skin Tones works on top of Skin Tone Color Correction and Skin Tone Shrinking.

Advanced Parameters : for both detection and correction filter, center values can be set across the entire range of human skin tones. There is a smooth behavior between all skin tone ranges.



Exercise 3a creating a reference job without Skin tone correction

1. Create a new Wide Format Job
2. In the product pane add the "huidtinten.jpg"
3. Click the "Generate preview" button
4. Place the product on the pressheet.
5. Submit with "hold" and name the job "Huidtinten without skin cor"

Exercise 3b using ap_Skin tone correction

6. Duplicate the previous job and activate the Preflight panel of the job inspector.
7. Filter on skin and activate the "Ap_Skin tone correction" actionlist.
8. Click the "Apply changes" button and consecutively the "Generate Preview" button.
9. Submit with "hold" and name the job "Huidtinten with skin cor"

Exercise 3c modifying the skin correction settings

10. Duplicate the previous job and activate the Preflight panel of the job inspector.
11. Click on the arrow next to the skin correction action list and change and de-activate the dark skin tones.
12. Click the "Apply changes" button and consecutively the "Generate Preview" button.
13. Submit with "make and hold" and name the job for example "Huidtinten with no dark skin correction".

Compare the rendered preview results.

14. Similar as in previous exercises compare all result with the rendered previews.

