

Histogram VCE Example

Demonstrating the Visual Chain Editor

Version 1.0 Mark Lucas 22 May 2005

Overview

Histogram Matching with VCE

This tutorial will use that project as a starting point to demonstrate some of the capabilities of the visual chain editor and connectable objects in OSSIM. The Visual Chain Editor (VCE) exists as a separate environment in the ImageLinker program. The VCE allows the user to construct, inspect, and manipulate custom image processing chains through direct interaction with the image objects.

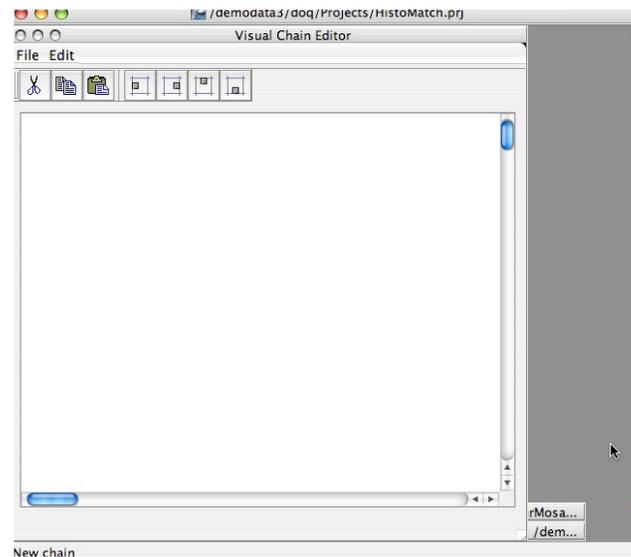
Reload the Project and Copy into VCE

Start up ImageLinker and follow the following steps:

Reload the histogram.prj file that you created and saved in the Histogram Example Tutorial.

Window->Minimize All

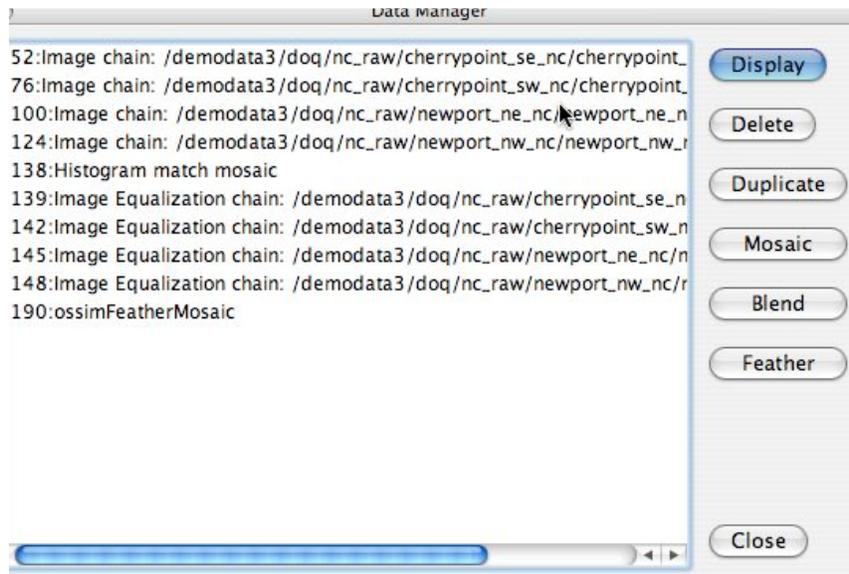
VCE->New Chain



This creates a new visual chain editor canvas. It is possible to build image chains from scratch by selecting components from the VCE components window, but it is often easier to replicate existing chains that have been loaded into ImageLinker. In this example we are going to take advantage of the chains that we created previously in the Histogram example.

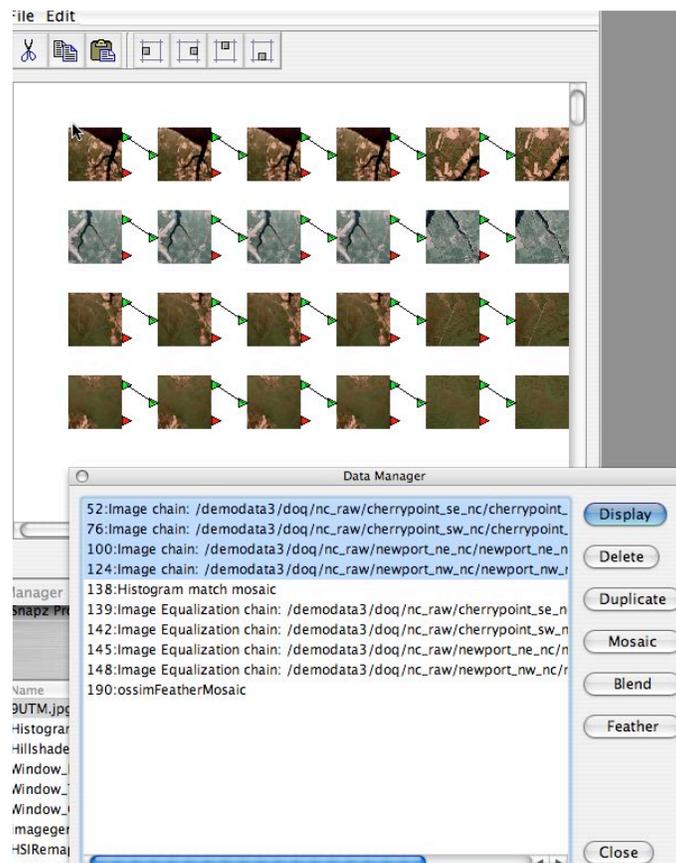
Using the Layer Manager

Select **Layer->Manager** to bring up the dialog box shown below:

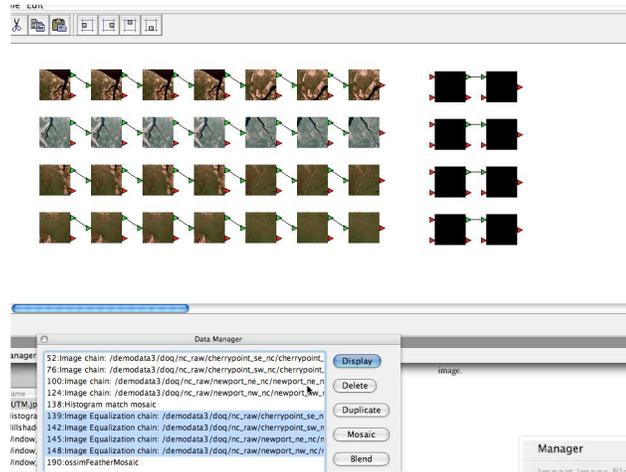


Drag Chains to the VCE Canvas

Select the top four image chains and drag them to the upper left of the VCE canvas. The chains will be replicated in the VCE environment.

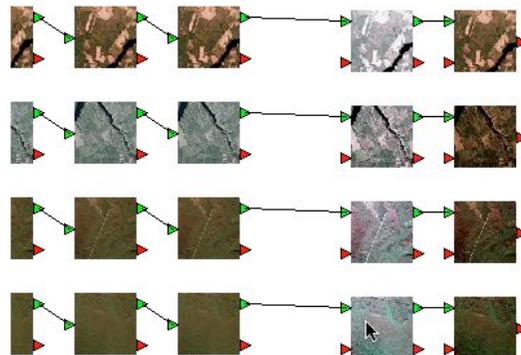


Resize the VCE canvas if necessary and then drag the four Image Equalization chains from the manager to the VCE canvas placing them to the right of the previously loaded chains. You can select and deselect the objects as needed to reposition them on the canvas.



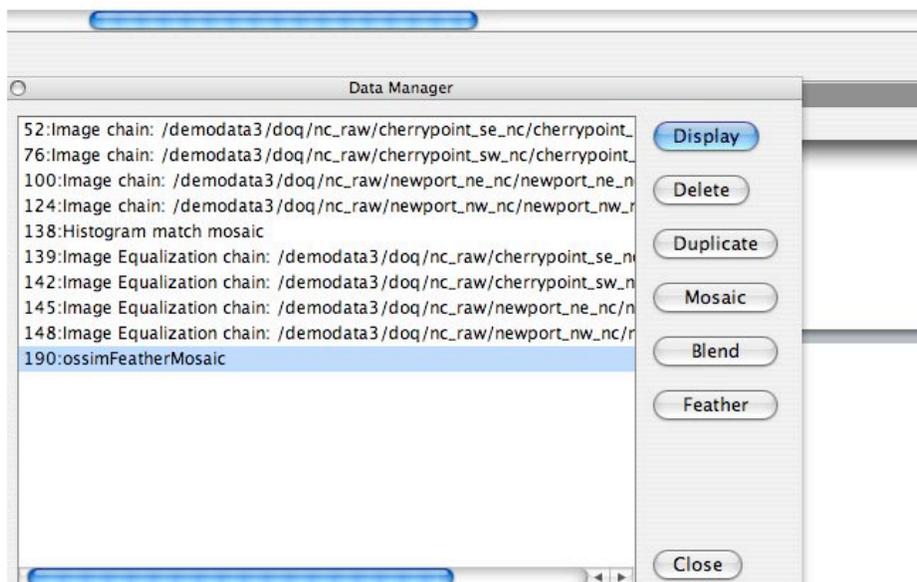
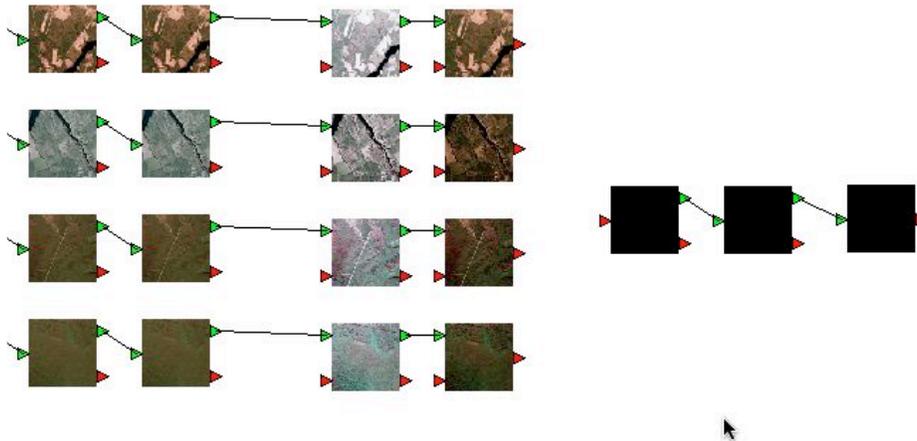
Connect the chains to the histogram equalizations

For each of the four image chains connect the output of the image chain to the input of the equalization chain.

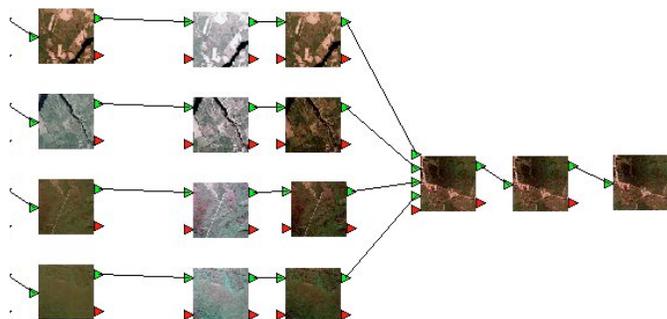


Drag in a feathering mosaic chain and connect

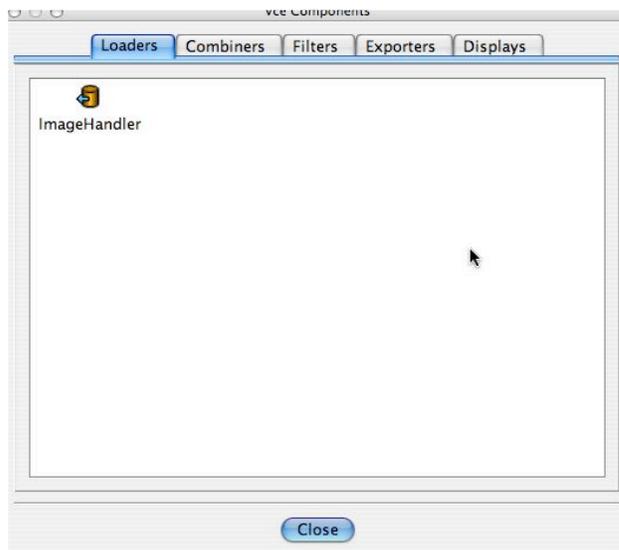
Once again, go to the Layer Manager and drag the ossim feather mosaic into the VCE canvas and deposit it to the right of the existing chains.



Connect each of the four chains output to the input of the feather mosaic.

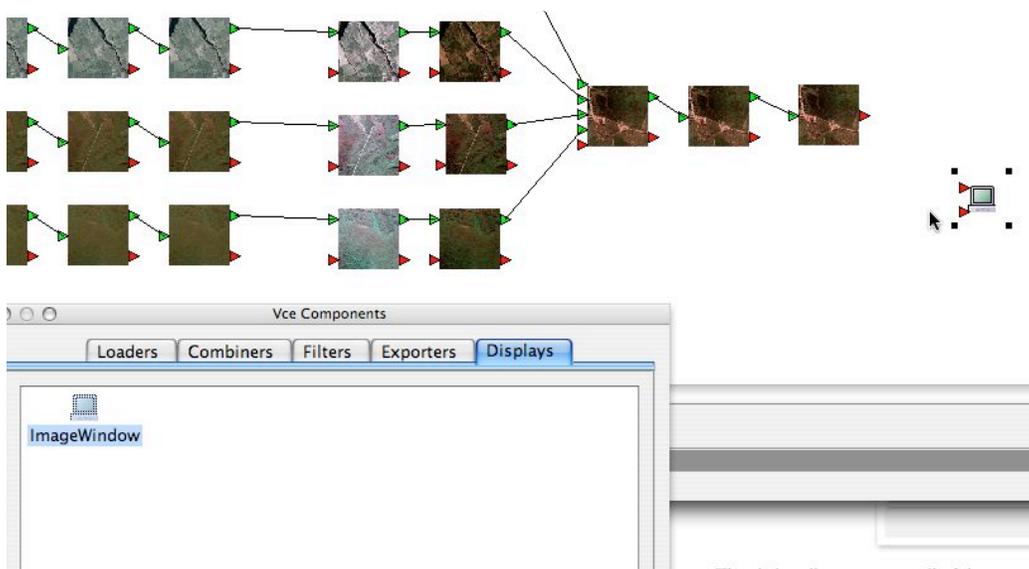


Open **VCE->Components** from the main menu.



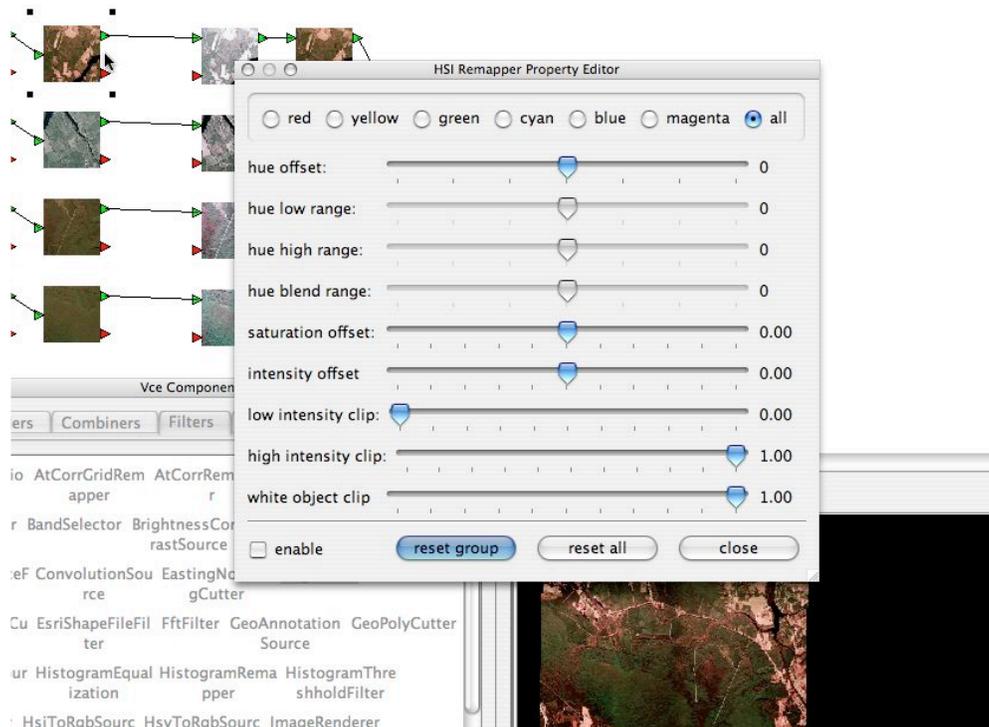
This dialog allows access to all of the components, filters, loaders and displays available to OSSIM. Click on the Displays Tab and drag a display (Image Window) on to the VCE canvas.

Minimize each of the four source DOQ windows leaving only the histogram matched mosaic display open within the canvas.



Connect the Display

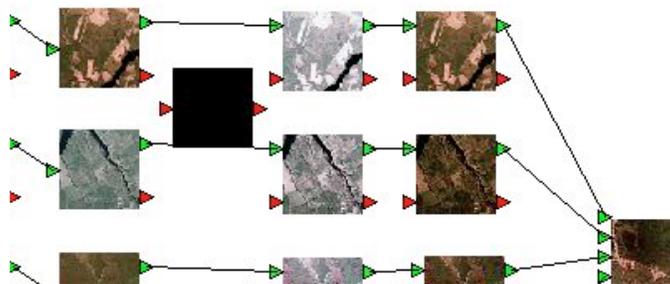
Connect from the end of the mosaic chain to the input of the display to bring up an ImageLinker image display. You should see an Image Window that displays the feathered mosaic. Each object in the chain performs a function and most objects have adjustable parameters. Double click any object to bring up its parameter dialog. For example, clicking on the last object in the first image chain



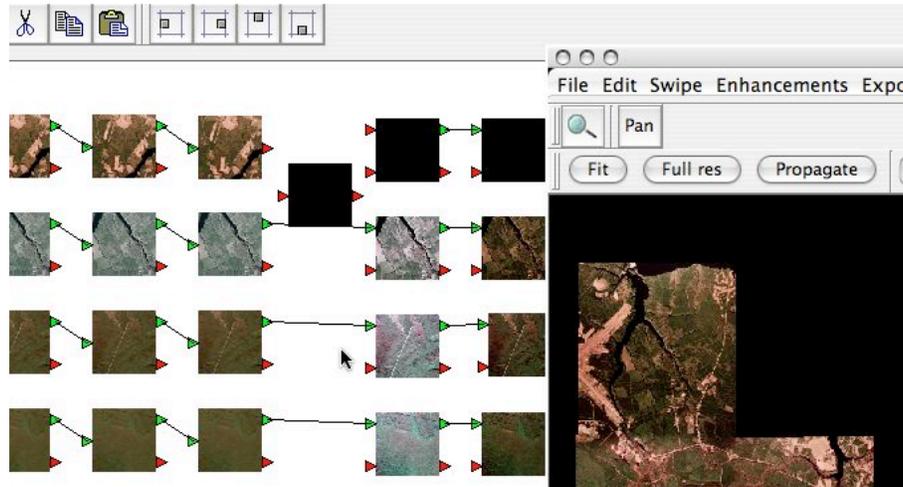
will bring up an HSI remapper property editor. Move the sliders and you will see the changes being made within that section of the mosaic in the open display. Close the dialog box when done.

Add an edge filter

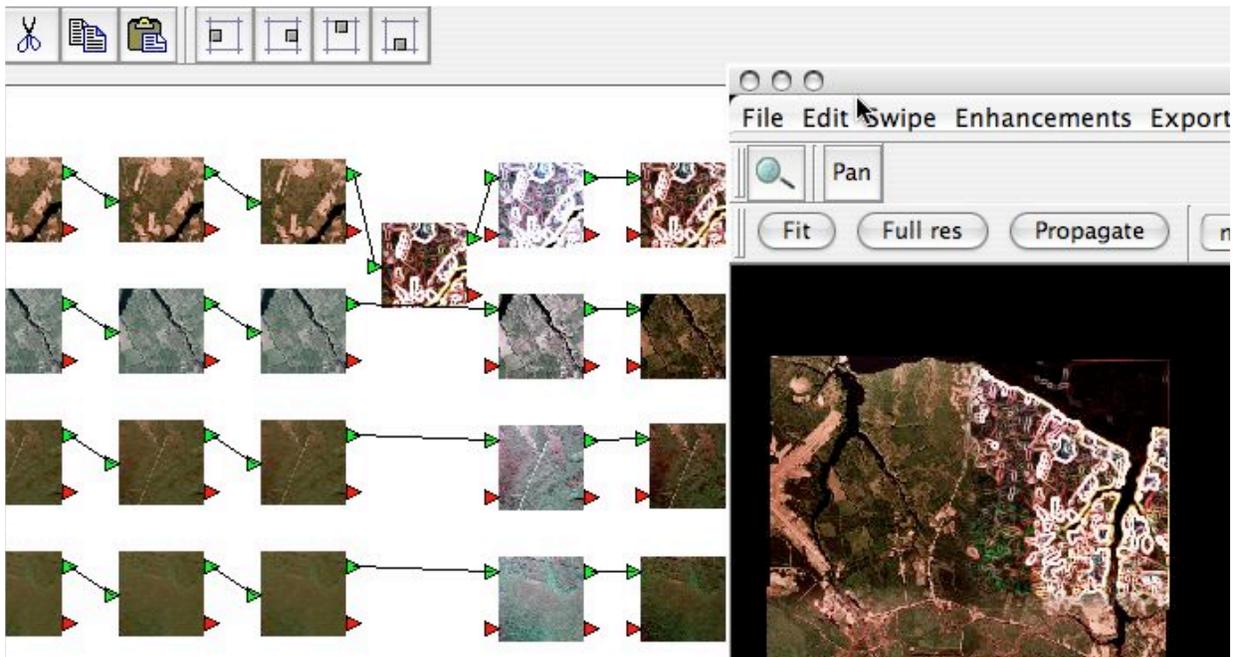
In the components dialog box, select the filters tab and drag an edge filter on to the canvas.



Select the line making the connection between the end of the first image chain and the start of the equalizer chain, then click the scissors button in the top of the window to remove the connection. Notice that the upper right quadrant of the mosaic disappears in the display window.



Now reconnect through the edge filter that you previously placed on the canvas. You have now added an edge filter into the image chain and the results are automatically pulled through into the display window.



Summary

This concludes an introduction to the visual chain editor canvas and components within Image-Linker. OSSIM constructs image chains from dynamically connectable image units. Processing within OSSIM is non-destructive and parameter driven. Within the Visual Chain Editor the parameters of image units can be inspected and modified by double clicking on its icon. A properties dialog box will then appear providing access to the adjustable parameters. Image units can be dynamically connected and disconnected. Finally, by attaching a display at the end of the chain it is possible to generate the product to a file through use of the **Export->run igen** command. This dialog also provides the ability to save the chain in a spec file for later use and / or modification.