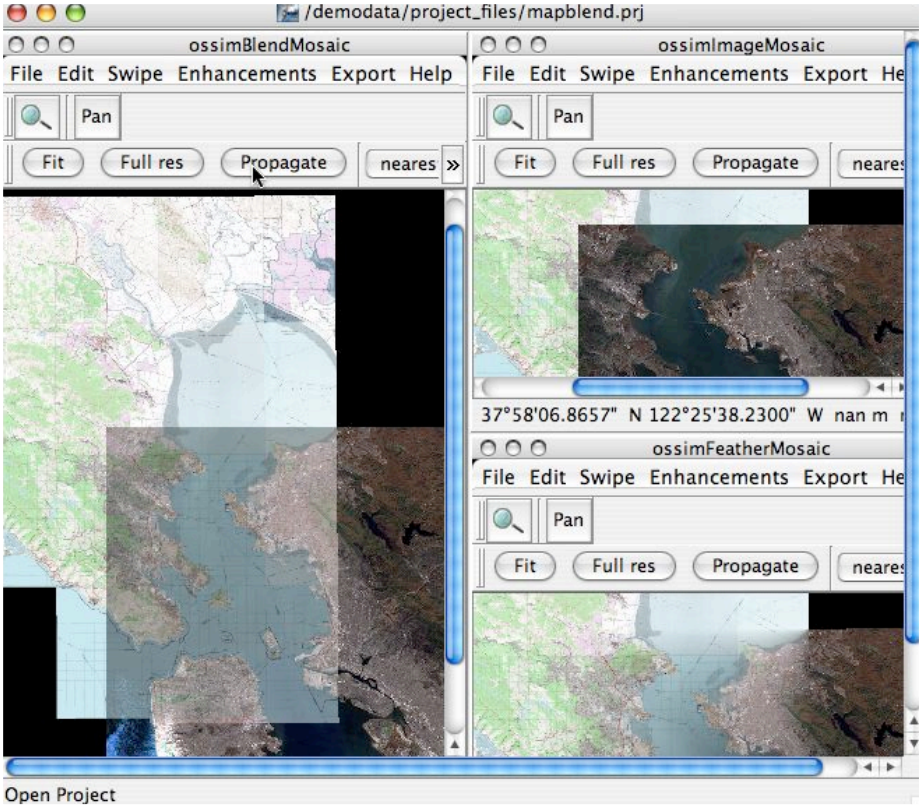


Map Blending Using Combiners

Map to Image Combinations

Version 1.0 Mark Lucas 24 May 2005

Overview

Studying the different combiner modes in OSSIM

OSSIM and ImageLinker provide several ways to combine geo-spatial data sets. This exercise will demonstrate simple mosaics, blends, and feathers with a map and image of the San Francisco area. The data sets in this example are part of the sample data set that is available on ftp.remotesensing.org.

Preparation and Setup

Refer to the OSSIM Installation document for detailed instructions on installing OSSIM and acquiring some sample data. This first tutorial uses data that can be found on ftp.remotesensing.org.

Login as anonymous leaving your email address as password.

Then cd incoming/ossim/sample_data to find some tutorial data sets. From a terminal window you can typically perform the following commands:

```
ftp ftp.remotesensing.org
login:  anonymous
Password: <youremail@yourcomputer.com>
cd ossim
cd sample_data
cd map_and_sanfran
ls
```

you should see:

-rw-r--r-- 1 ftpuser ftpusers 2790904 Jan 31 2003 map_and_sanfran.tar.gz

get map_and_sanfran.tar.gz

Wait for the download to complete then:

exit

to exit the ftp command

The file should download to your local disk. You might want to place it in a separate directory

mkdir testdata
mv map_andsanfran.tar.gz testdata
cd testdata
ls

unzip and untar the file

gunzip map_and_sanftan.tar.gz
tar xvf map_and_sanfran.tar

perform an ls to see that the files are there

ls

highres_utm_map.geom	sanfran.geom
highres_utm_map.ovr	sanfran.ovr
highres_utm_map.tif	sanfran.tif
highres_utm_map_readme.txt	sanfran_readme.txt
map_and_sanfran.tar	

These files have been prepared as a test set for the ImageLinker program. ImageLinker will take advantage of auxilliary files if they are present. There are several OSSIM command utilities to create these files for data sets. Included in the sample data set is a raster map and a section of a satellite image over San Francisco. The initial files were sanfran.tif and highres_utm_map.tif - both geotiff files. GeoTiffs are tiffs that have geospatial tags embedded in the file.

The respective ovr files are overview files containing reduced resolutions sets. These files can be generated with the img2rr (image to reduced resolution) command line utility. The geom files contain geometry information and were created with the create_geom command.

Histogram files can be created with **create_histo**.

The readme.txt files are human readable files about the data sets.

These two files will be used to demonstrate some of the basics of ImageLinker.

So start up ImageLinker and follow the following steps:

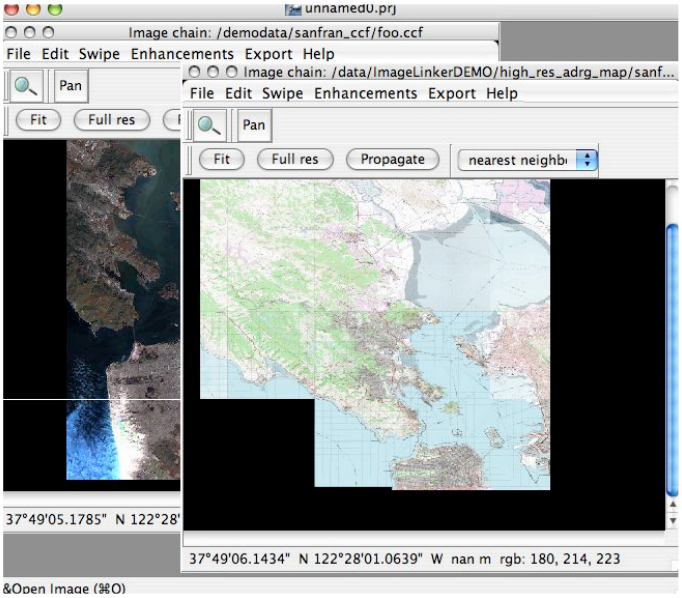
Example

Open the source files

Open the source code files for the map and Landsat image of San Francisco. Note, navigate to where your source files are and open them. The follow command assumes they are located in /testdata.

File->Open, navigate to /testdata/highres_utm_map.tif

File->Open, navigate to /testdata/san_fran.tif

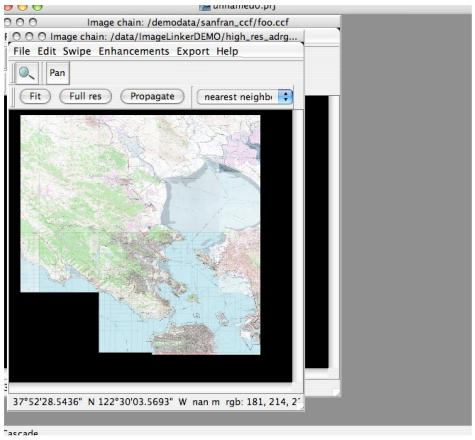


The ImageLinker canvas should reflect that the map and the Landsat image have been loaded.

Managing Windows

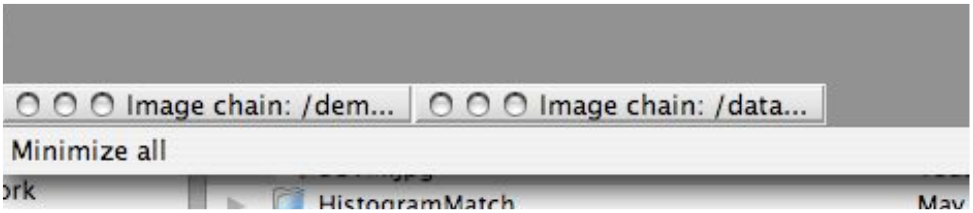
In this introductory tutorial we will get a feel for some of the window management and display commands. Each project in ImageLinker lives in its own canvas. Standard maximize, minimize and collapse icons work on the project canvas within the desktop. The display windows within the project treat the canvas as their desktop. Each display can be be minimized, maximized, or collapsed. Additionally, there are a couple of useful commands for organizing the windows. Lets try a couple.

Select **Window->Cascade**



The open displays are cascaded within the project canvas.

Select **Window->Minimize All**

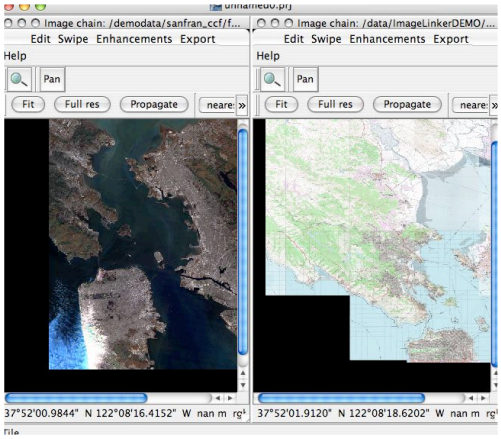


Collapses the displays into the bottom of the Canvas.

Place the images side by side by using the Tile menu command

Select **Window->Restore All**

Select **Window->Tile**

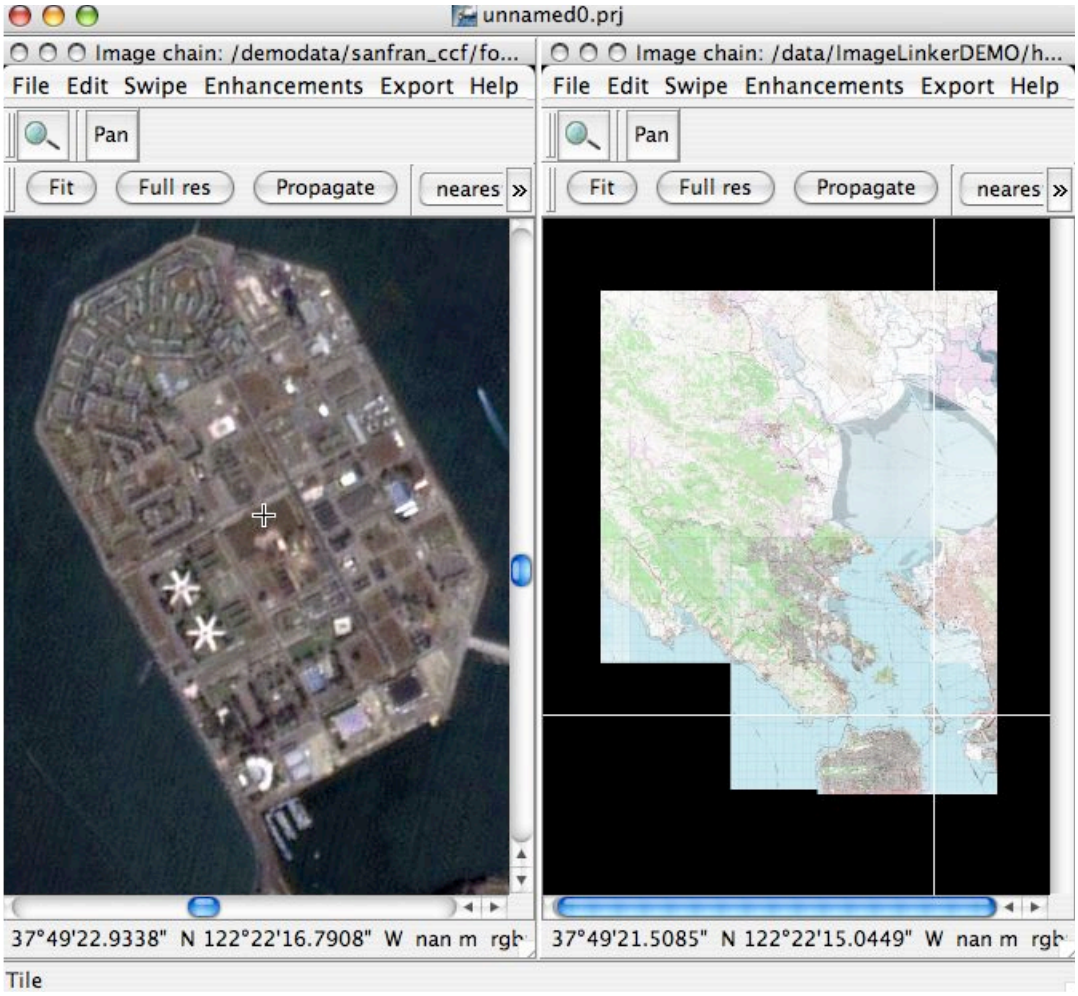


Pan, Zoom and Propagate in the Displays

The displays have several modes and capabilities that make it easy to navigate and synchronize displays within a project. In the center of the Landsat scene is Treasure Island, place the cursor over the island and click. Note that the Latitude and Longitude of the mouse click is displayed at the bottom of the window.

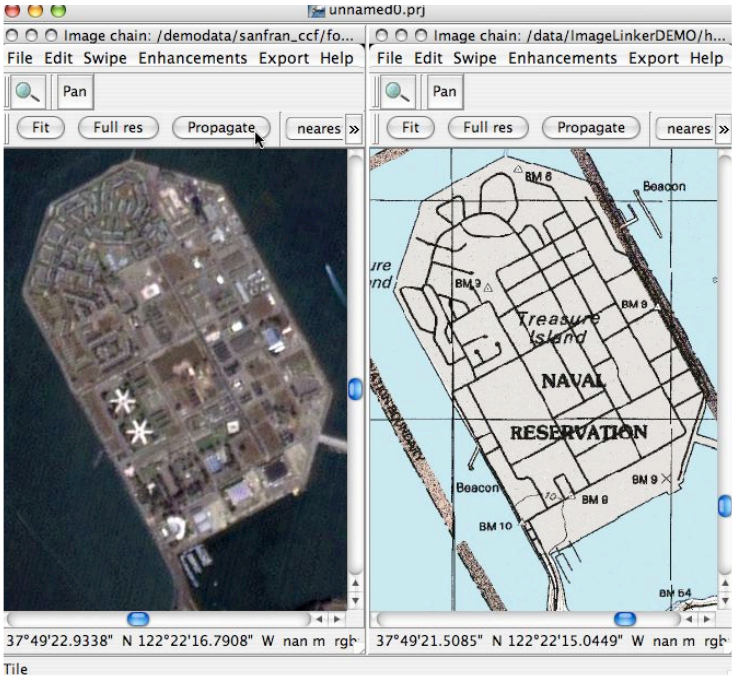
Click on Treasure Island

Click on the Full res button



You should see a display similar to that shown above. Note the tracking cursor lines in the map display track the geographic location of your cursor. Tracking cursors will appear in all geographically coincident windows within a project.

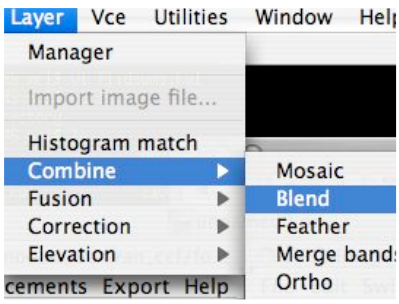
In the Image Window Press the **Propagate** Button



The geometric view is updated in all open windows to the same scale and orientation. You can toggle the cursor modes between zoom and Pan with the icon buttons at the top of the display for general navigation.

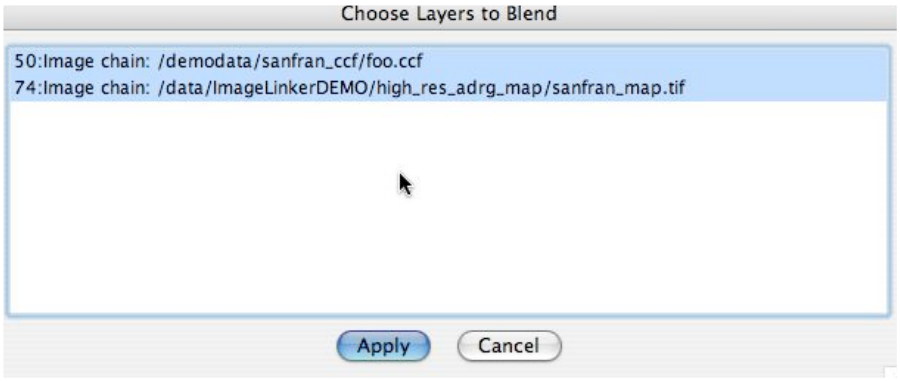
With the displays zoomed to treasure island as shown above. Lets start with a blend display. In the main menu select Blend under the Combine submenu under the Layer menu.

Layer->Combine->Blend

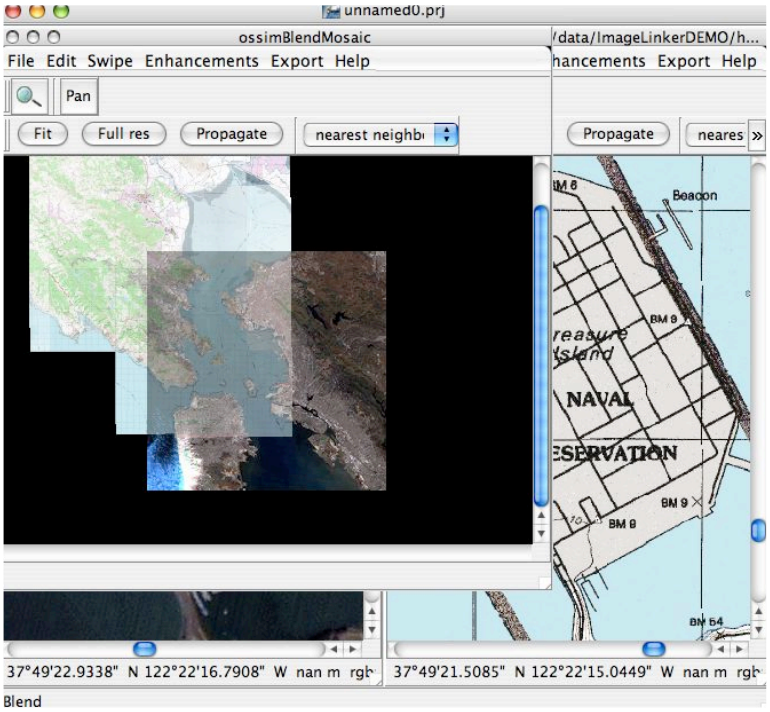


A dialog box will appear with a list of image chains that can be combined. Select both the map and the image and press the Apply button.

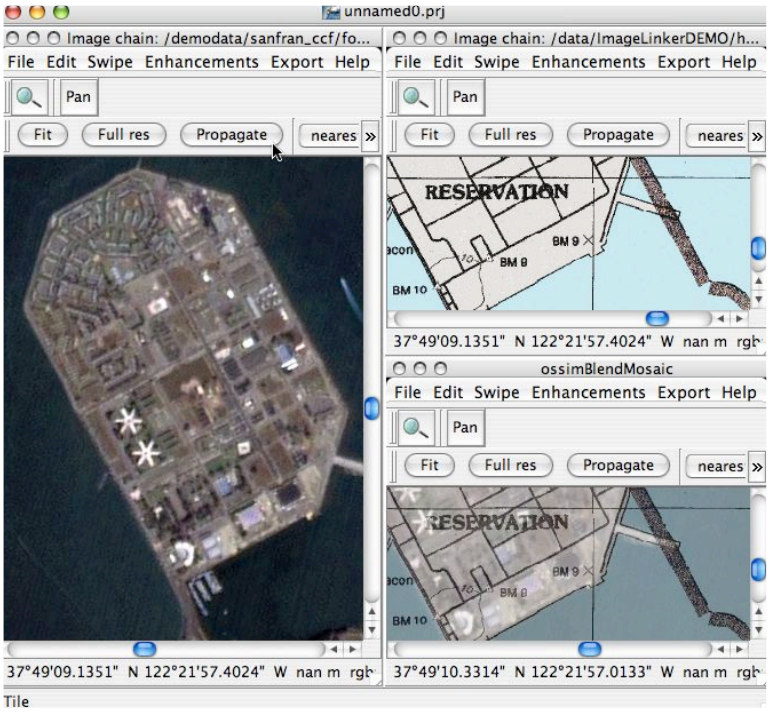
Apply



A new display appears that is blended, press the **Fit button** on the new display to get an overview. You will notice that the data sets are blended together in the overlap area.



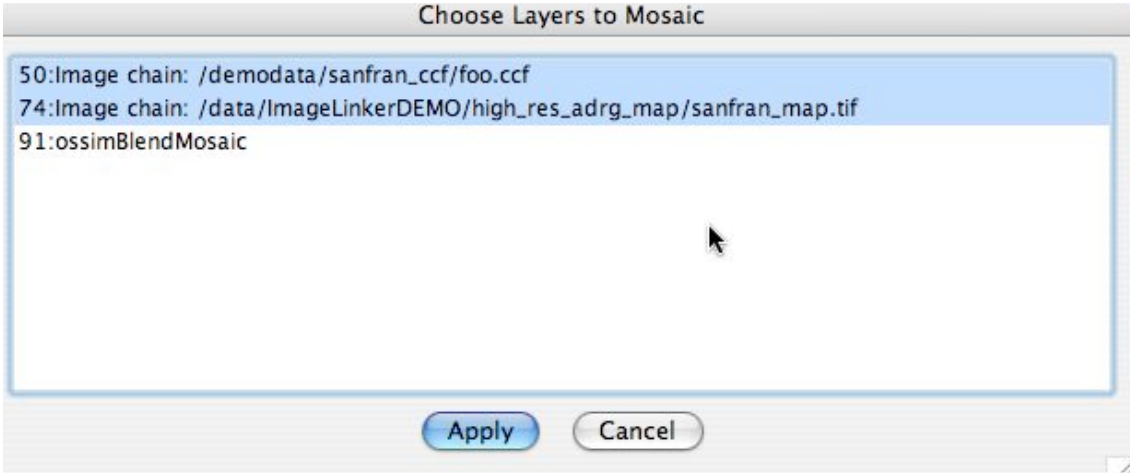
Window-->Tile and in the Landsat image window press the **Propagate** button



The view is propagated to the blend and map windows.

Minimize the source windows for the map and Landsat image by clicking in their display minimize buttons. This should leave only the blended display. Now we will create feathered and mosaic displays.

Layer-Combine->Mosaic and select just the map and Landsat image chains



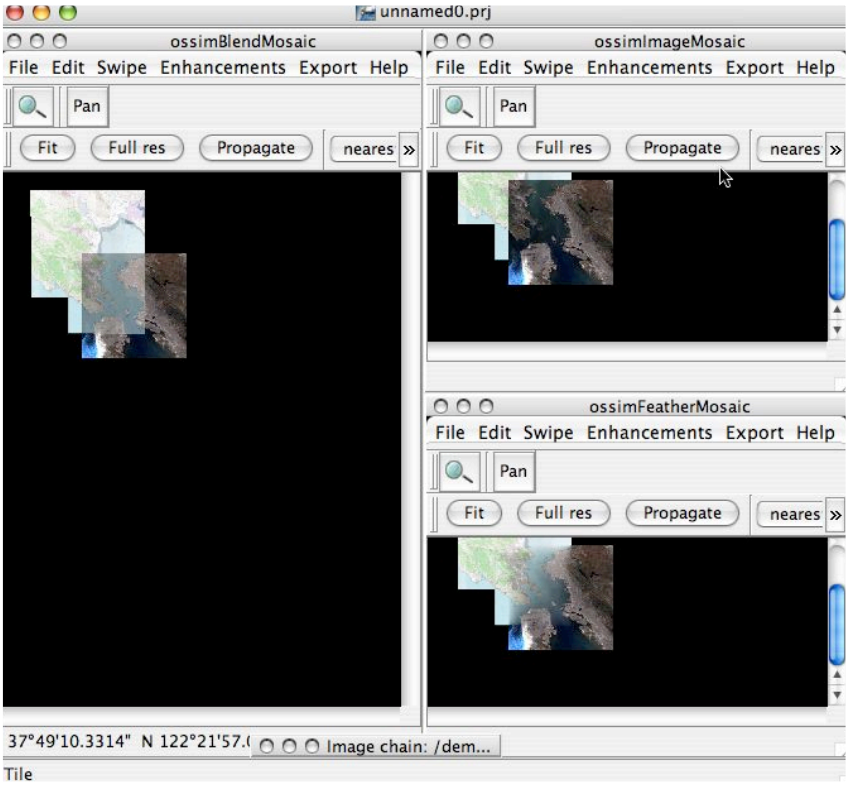
Press the **Apply** button

Next we will go ahead and create a feathered display as well. In similar fashion select

Layer->Combine->Feather

Again, just select the first two lines - the source files and press the Apply button. Clean up the displays by selecting **Window->Tile**

Select any of the displays, press the **Fit** button, then press the **Propagate** button and you should end up with something similar to this:



The difference between these three combiners is how it treats pixels in the overlap area. A mosaic simply chooses one source over the others, the blend averages the values of the pixels, and the feather changes the blend gradually as the distance from the seam increases. To change the weighting, sources, or any relevant adjustable parameters. Select the desired display and **Edit->Layers** to bring up the appropriate dialog box.

Save your project

File->Save Project as mapblend.prj.

Summary

This completes an overview of the various combiner methods available in OSSIM and ImageLinker. Using a map and image of San Francisco we demonstrated basic navigation of displays and window management tools in ImageLinker followed by the creation of various types of mosaics and overlap area combiners. These types of products are very easy to create in the tool sets. OSSIM automatically handles differences in input resolution, map project, file formats and radiometry types. Transformations are performed automatically to produce the product needed by any given display. Adjustable parameters can be accessed and modified through the Layer->Edit menu of any display. Though not covered in this tutorial, any display can generate a product through the Export->igen command.