



Image Processing Training

Mr. Bryan Bagnall
SPAWAR Systems Center, Pacific
Phone: 619-553-4061
Email: bryan.bagnall@navy.mil

Mr. Sparta Cheung
SPAWAR Systems Center, Pacific
Phone: 619-553-5927
Email: sparta.cheung@navy.mil

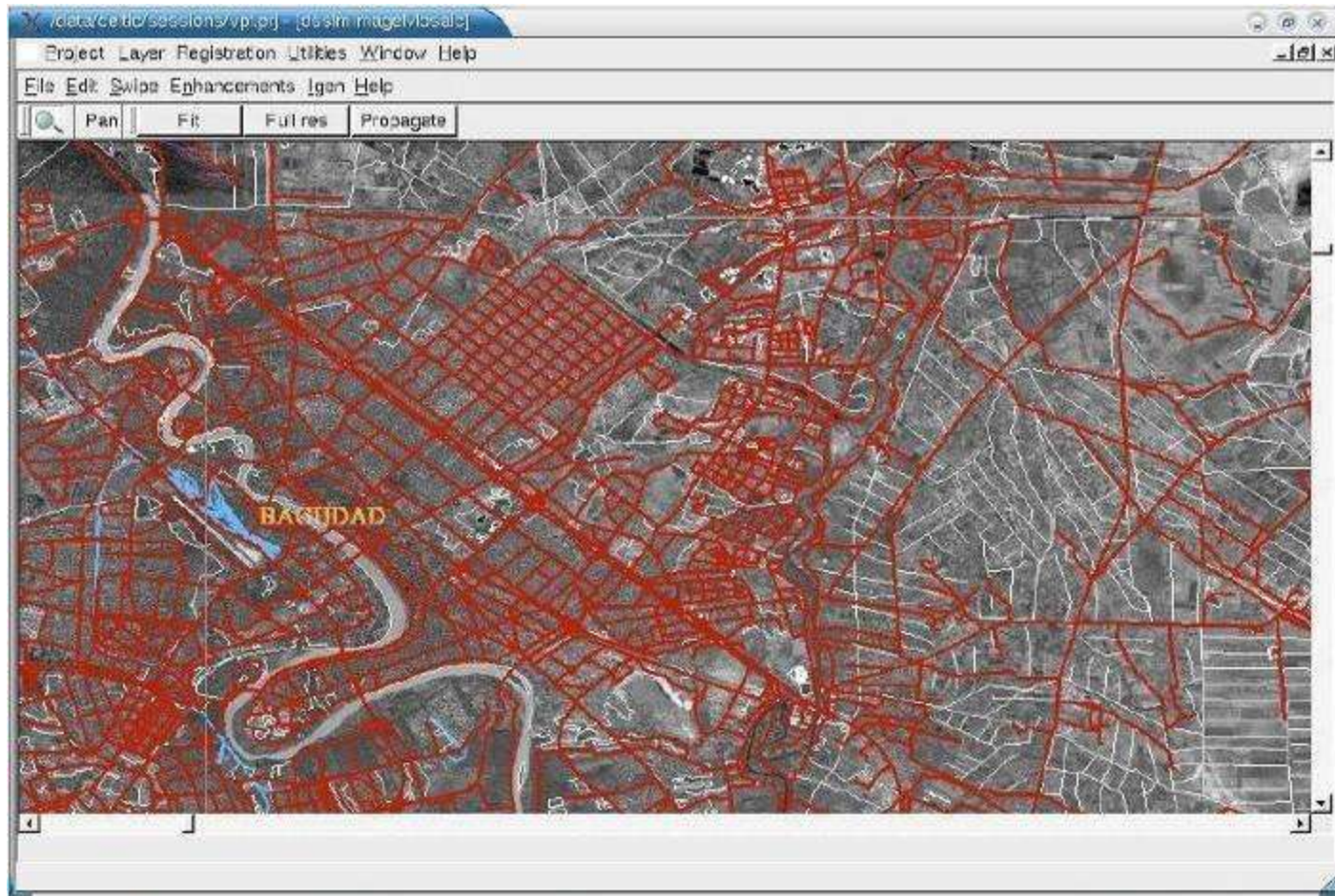
Disclaimer

- Though SSC Pacific makes every effort to perform quality assurance on its training materials, the material in this presentation may inadvertently include technical inaccuracies or other errors. We would be grateful if users notify us of any errors or inaccuracies they may find.
- The presentation contains references to links and to third-party websites. These are provided for the convenience and interest of users and this implies neither responsibility for, nor approval of, information contained in these websites on the part of the U.S. Government. The USG makes no warranty, either express or implied, as to the accuracy, availability or content of information, text, graphics in the links/third party websites. The USG has not tested any software located at these sites and does not make any representation as to the quality, safety, reliability or suitability of such software, nor does this presentation serve to endorse the use of such sites.

ImageLinker Tutorial and Applications

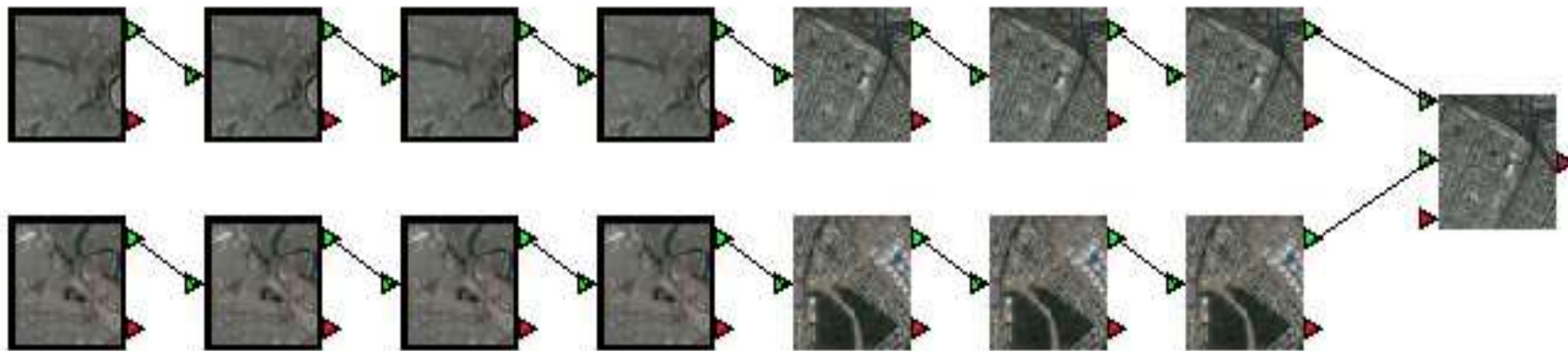
ImageLinker

ImageLinker - is an application for viewing and processing remote sensing and Geographical Information System (GIS) data.



ImageLinker – Image Chains

- Dynamically Connectible Image Chains
- Precision terrain correction, ortho-rectification, very large cross-sensor mosaics and fusions
- Source > Models > Filters > Combiners > Output
- Parameter Based, Non-Destructive Processing



ImageLinker – Supported Data Types

TIFF
NITF 2.0, 2.1
TFRD 1.3, 4.3
Raster (BIP, BIL, BSQ)
JPEG
Landsat fast format
ADRG
ESRI General Raster
Doqq V1 and V2
DTED all levels
XML

Shapefiles
SRTM
Usgs_dem
CIB
CADRG
CCF
JPEG2000
MrSid
Imagine (HFA)
Arc Info Ascii Grid

Note – Files Output

Imagelinker and ossimplanet need to write out 3 files every time you open an image:

HIS – histogram of image

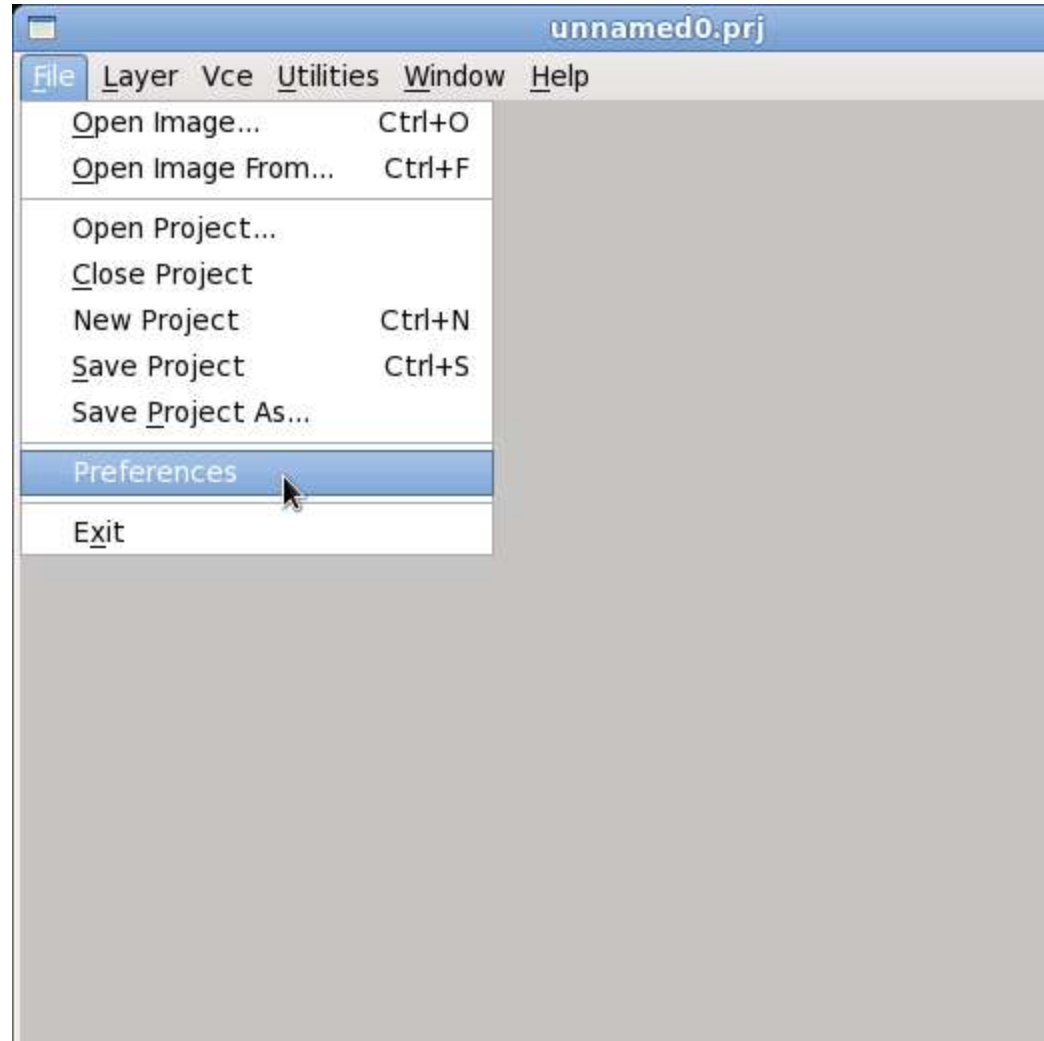
OVR – reduced resolution set or overview file (lets the image load fast in the future)

OMD – ossim metadata file

This makes it impossible to load an image from a CD, since you need to be able to write these images.

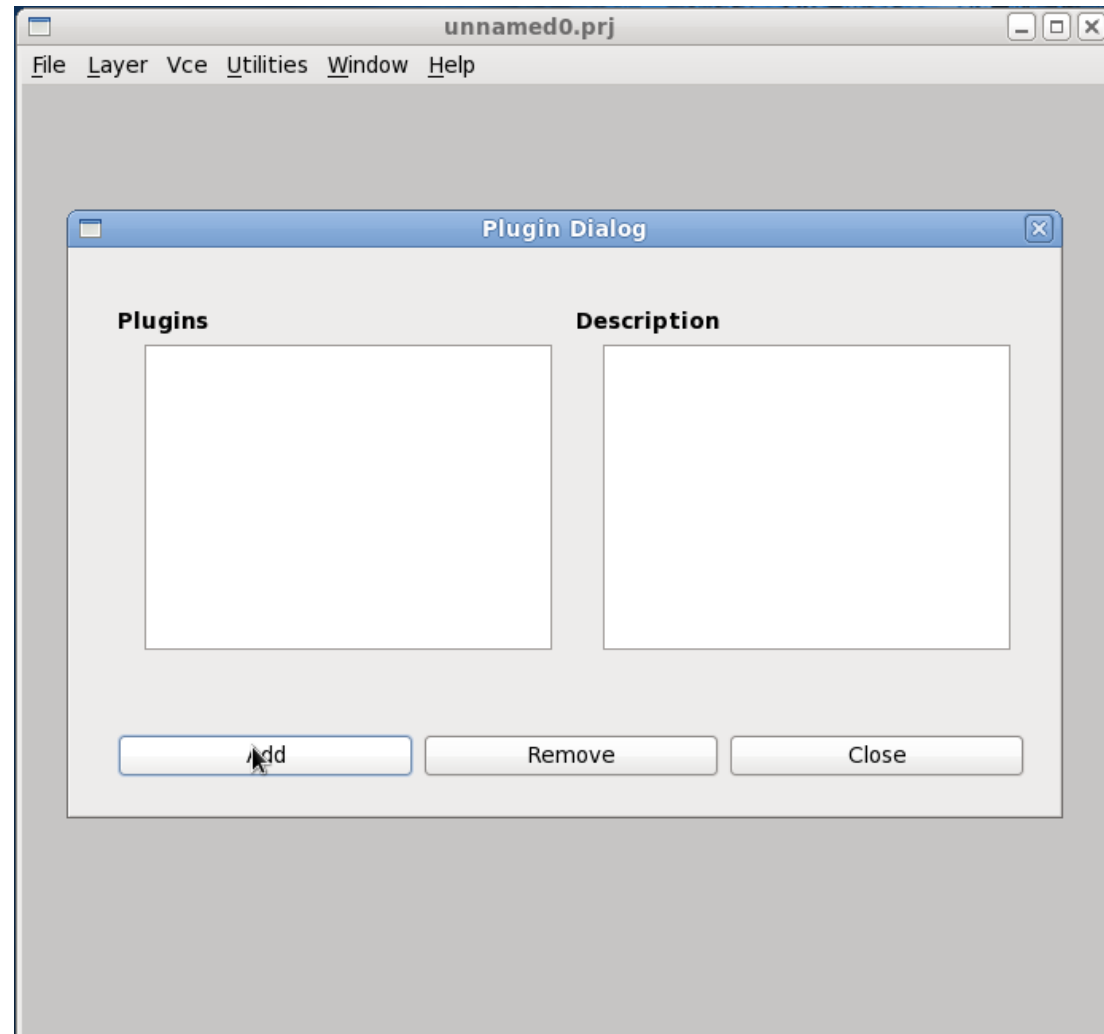
ImageLinker – Adding Plugins

From the ImageLinker menu,
select File->Preferences



ImageLinker – Adding Plugins

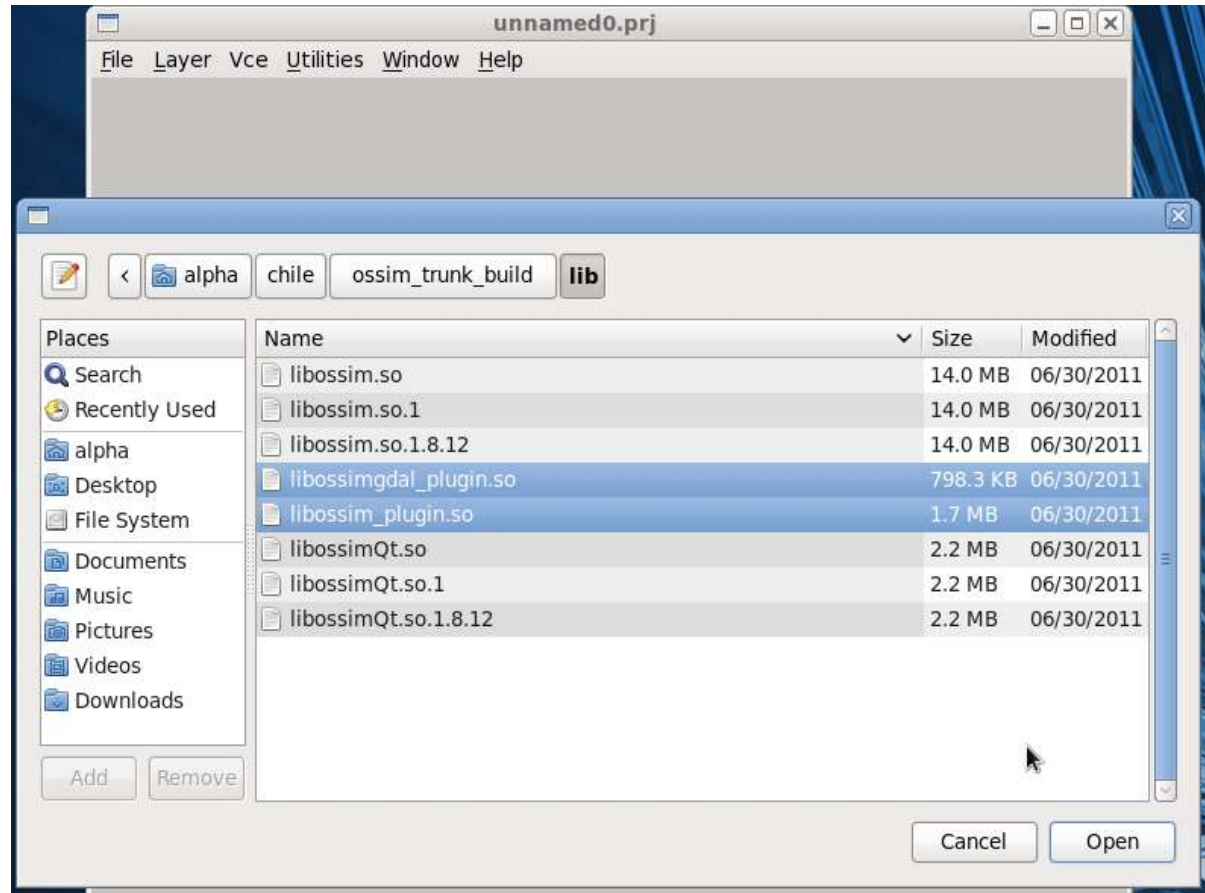
You should see no plug-ins loaded. Click Add



ImageLinker – Adding Plugins

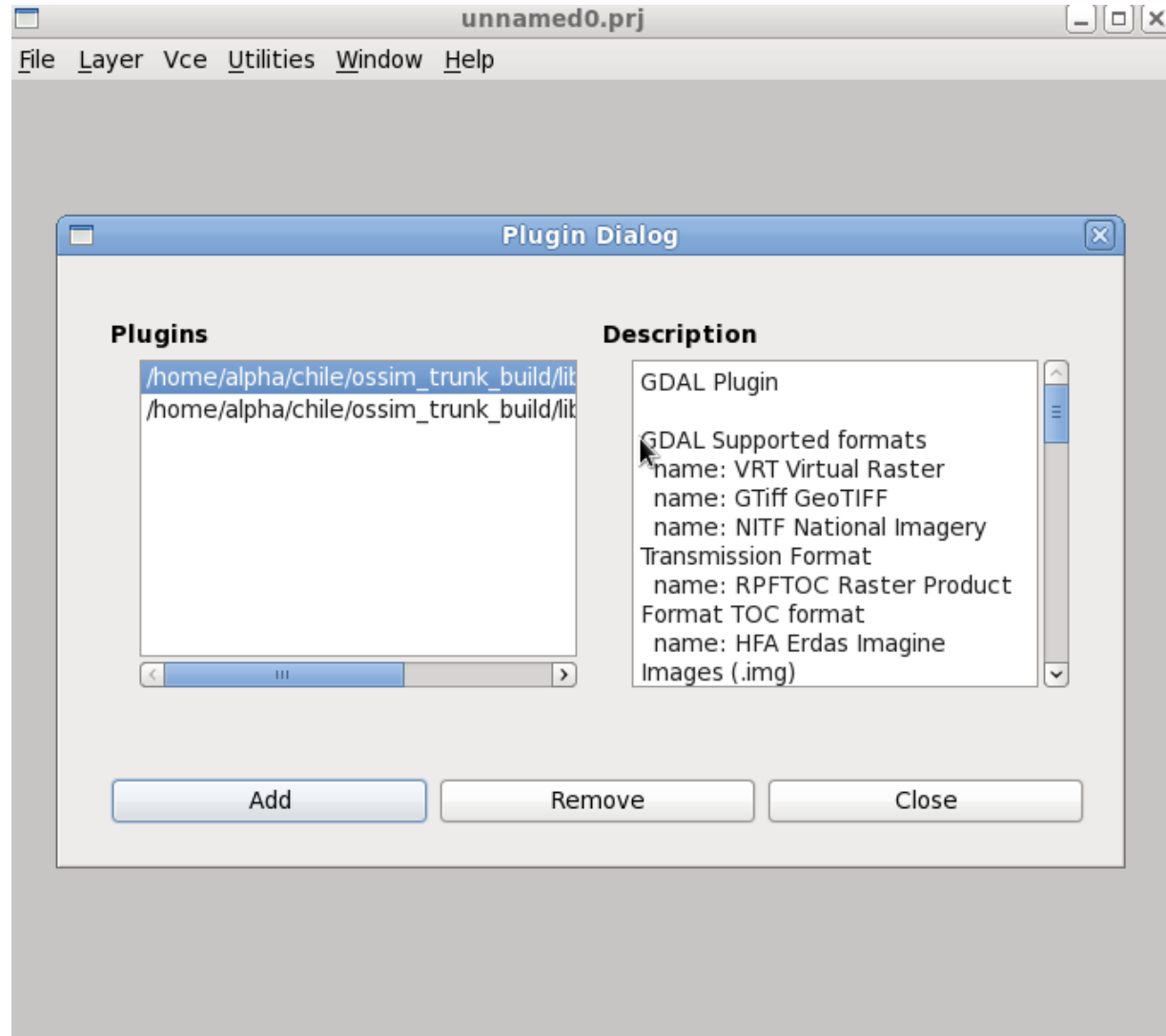
Navigate to /opt/alpha/ossim/ossim_planet_build/lib

Add libossimgdal and
libossim plugins

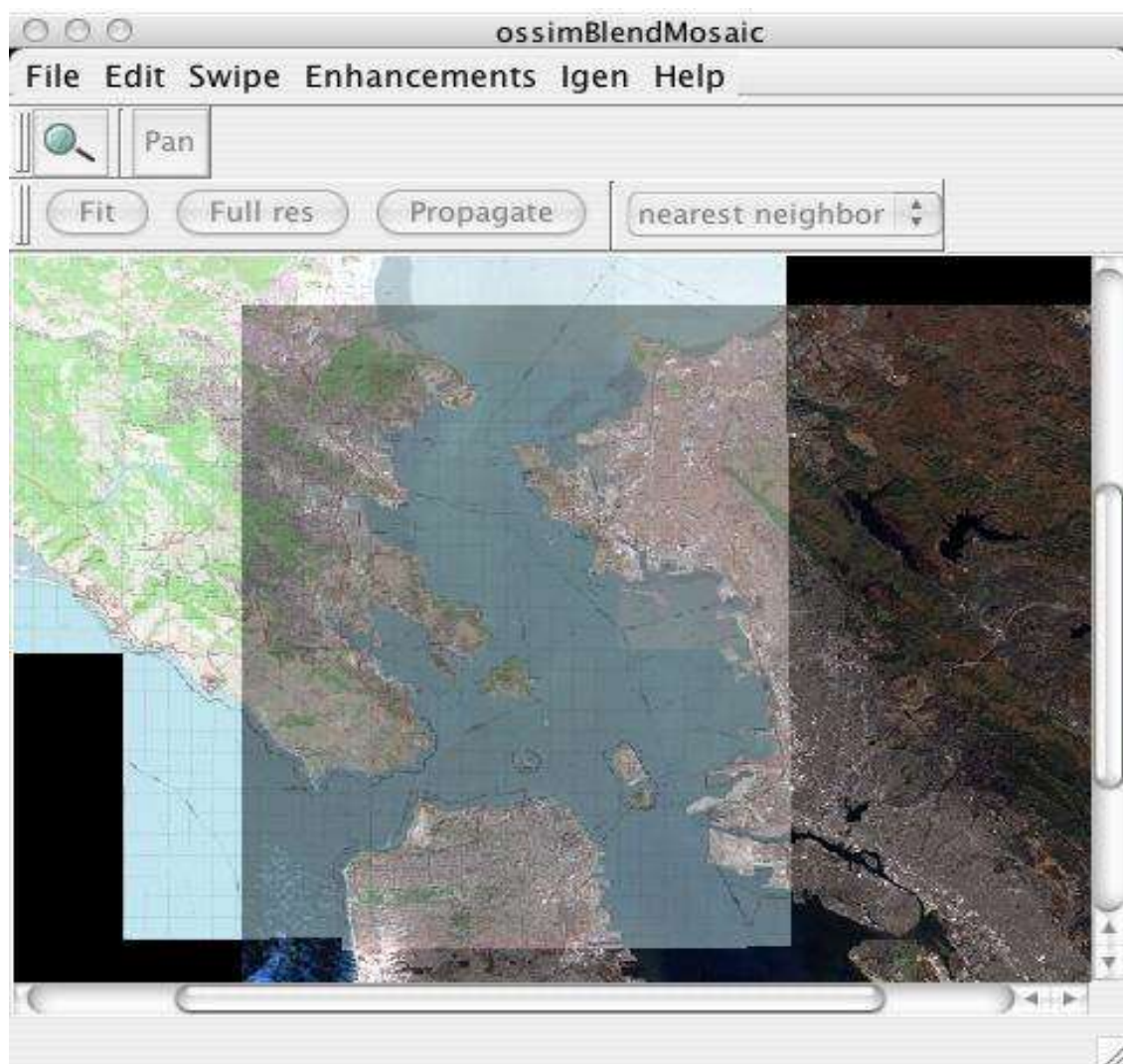


ImageLinker – Adding Plugins

You should now see both plugins that you loaded

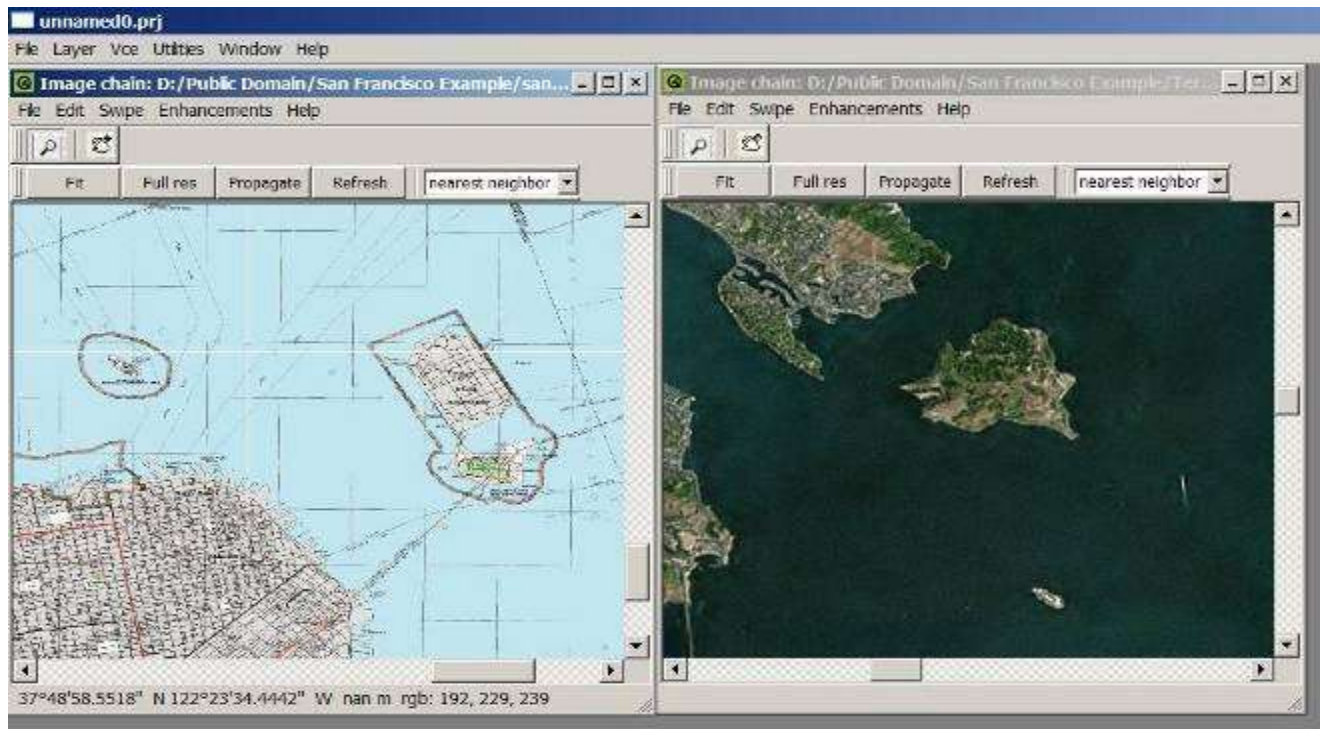


ImageLinker – Combiners



ImageLinker – Combiners

- File → Open
- Download and open \\Imagenes\San Francisco Example\ sanfran_map.tif and TerraColor_SanFrancisco_US_15m.tif
- Click YES when prompted
- Zoom to a location in one image and click Propagate
- You should be able to see the cross hairs on both images line up to corresponding locations



ImageLinker – Combiners

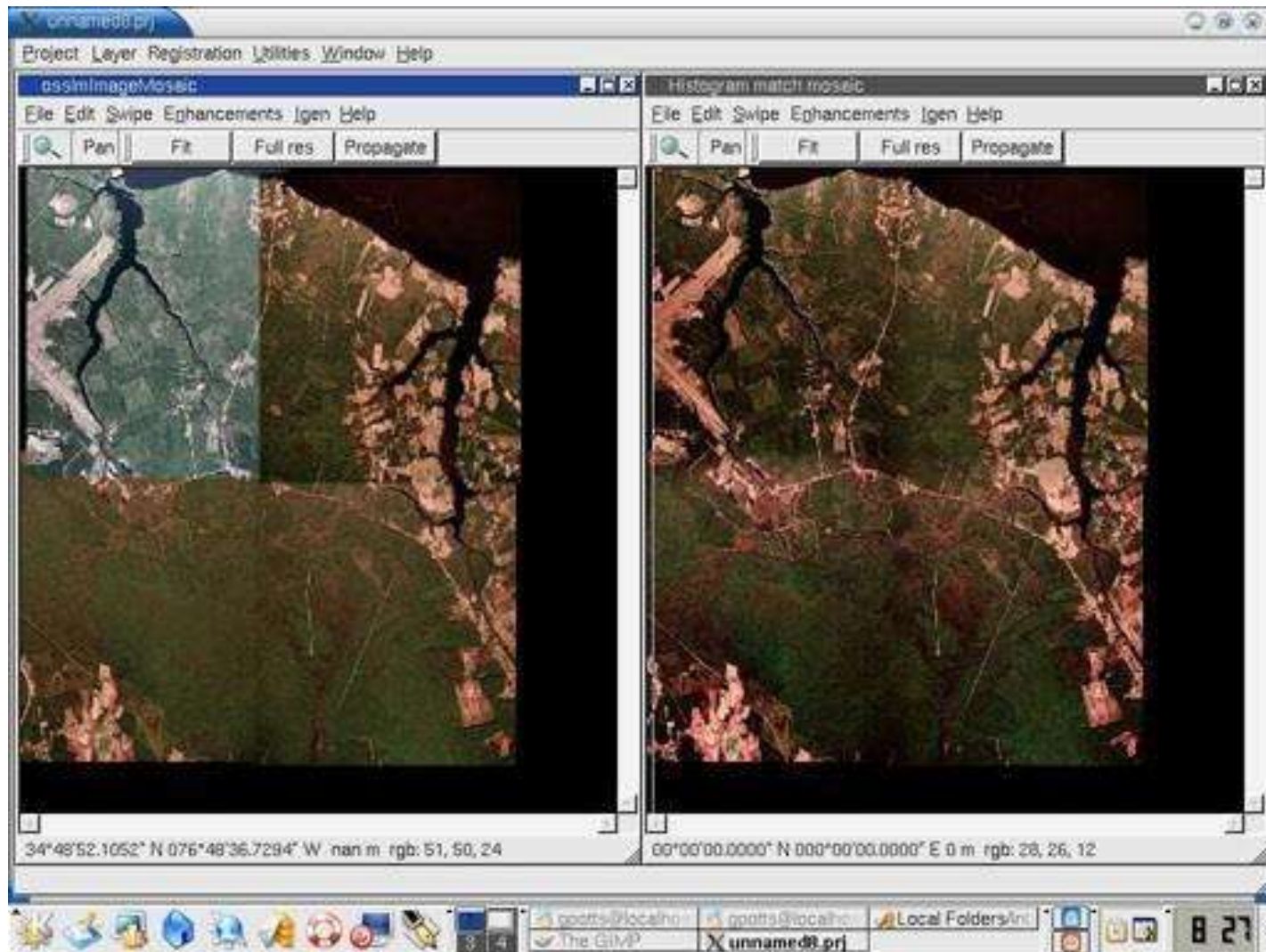
- Click Layer → Combine → Blend
- Select the two images and click APPLY
- Click Layer → Combine → Feather
- Select the two images and click APPLY
- Click Layer → Combine → Mosaic
- Select the two images and click APPLY

ImageLinker – Combiners



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.

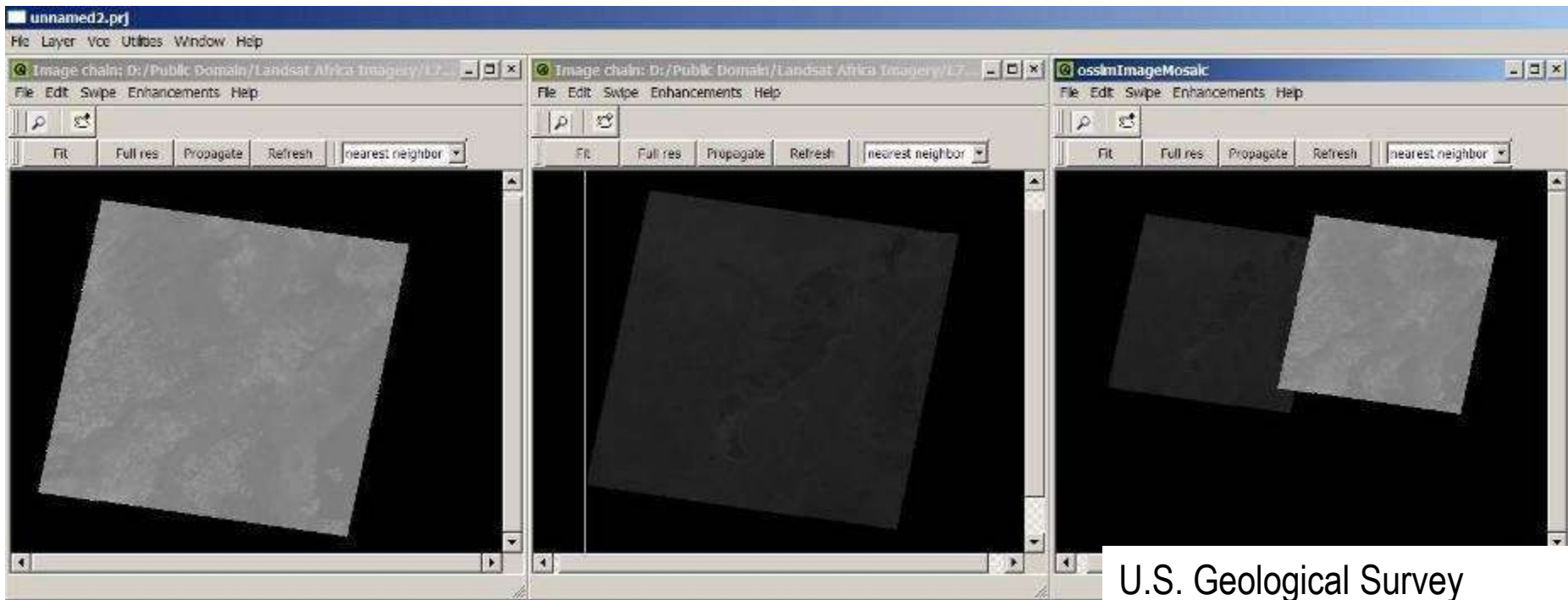
ImageLinker – Mosaics and Histogram Matching



ImageLinker – Mosaics and Histogram Matching

- File → Open
- \Landsat Africa Imagery\L71174066_06620000622_B20.TIF
- \Landsat Africa Imagery\L71173066_06620000530_B61.TIF
- Layer → Combine → Mosaic
- Choose Full Res and then Fit

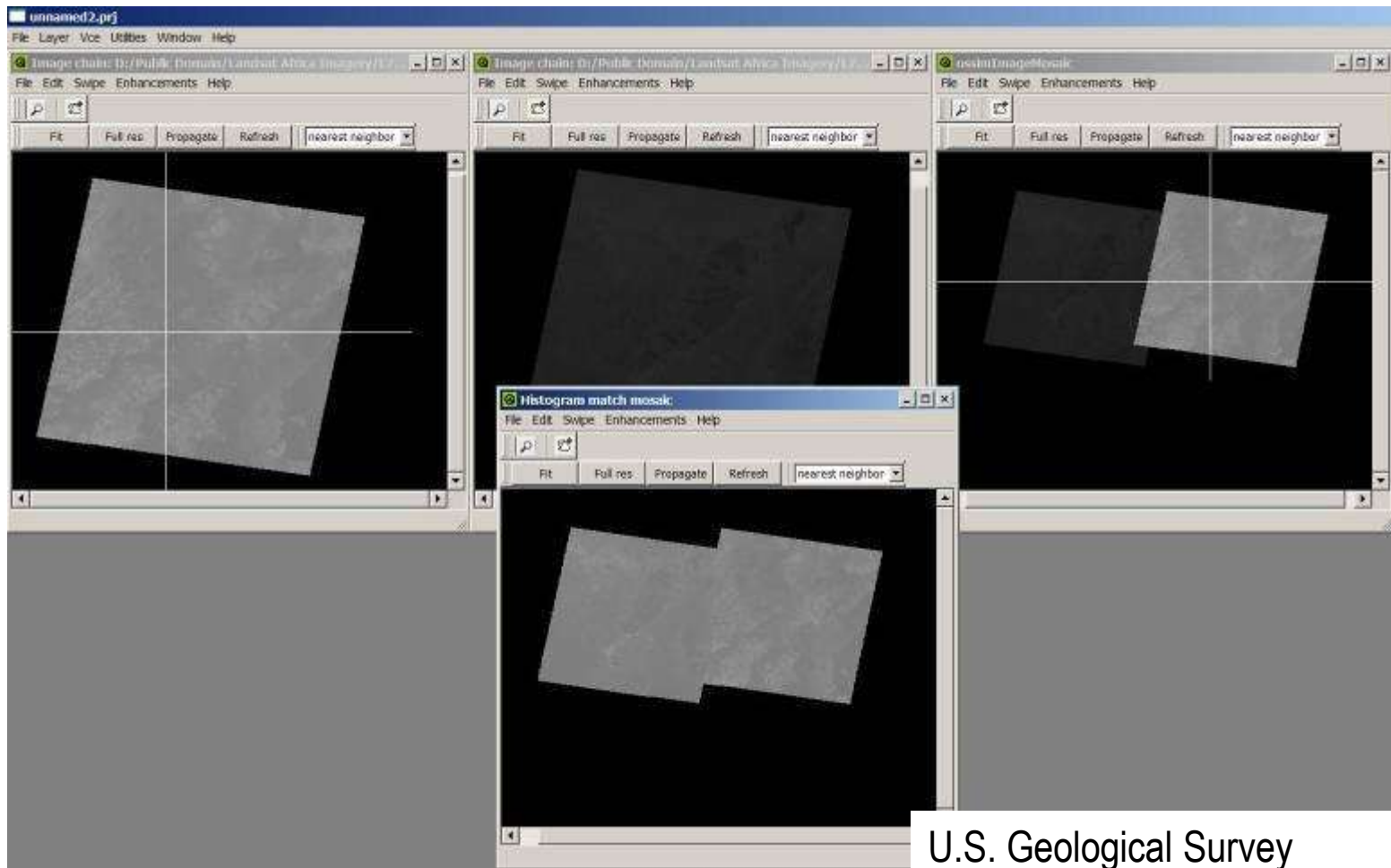
ImageLinker – Mosaics and Histogram Matching



U.S. Geological Survey

ImageLinker – Mosaics and Histogram Matching

- Layer → Histogram Match



U.S. Geological Survey

ImageLinker – Band Merging

- File → Open
- Open all of the \Landsat Africa Imagery\L71165037_03720090312_***.TIF
- Layer → Combine → Merge Bands
- Select all the images

ImageLinker – Band Merging

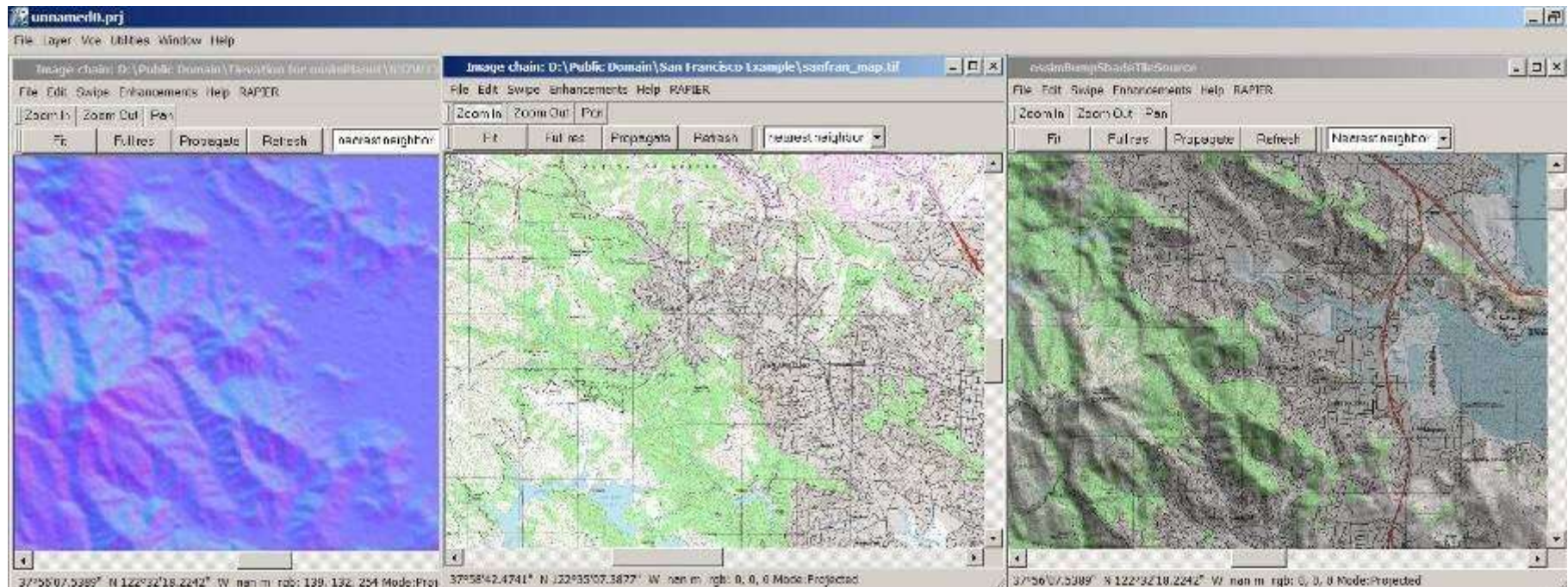
U.S. Geological Survey

ImageLinker – Band Selection

- Choose Enhancement → Band Selection on the color-merged image you just created
- Play around with the number of bands and order of bands

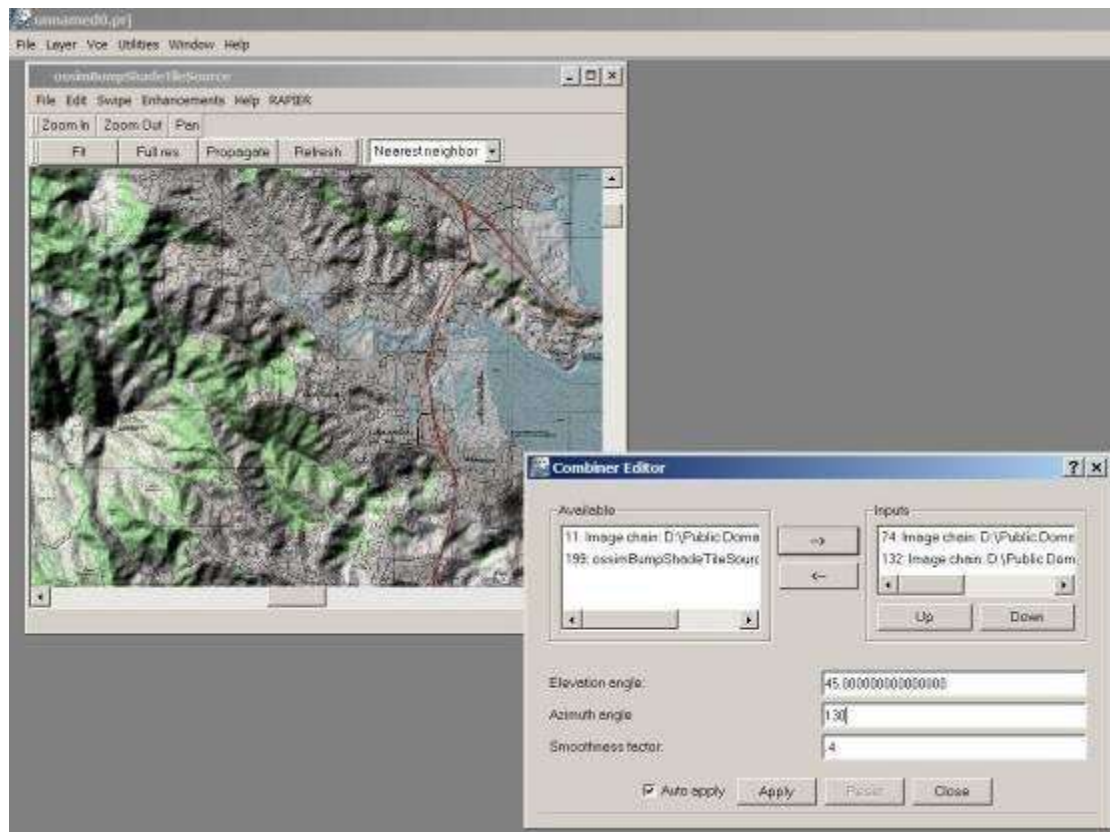
ImageLinker – Hill Shade

- File → Open Images\SanFranExample\N37W123.hgt
- File → Open \San Francisco Example\sanfran_map.tif
- Click Layers->Elevation->Normals and select the elevation file.
- Click Layer->Elevation->Hillshade and select both images.
- On the map zoom to an area of interest and click propagate.

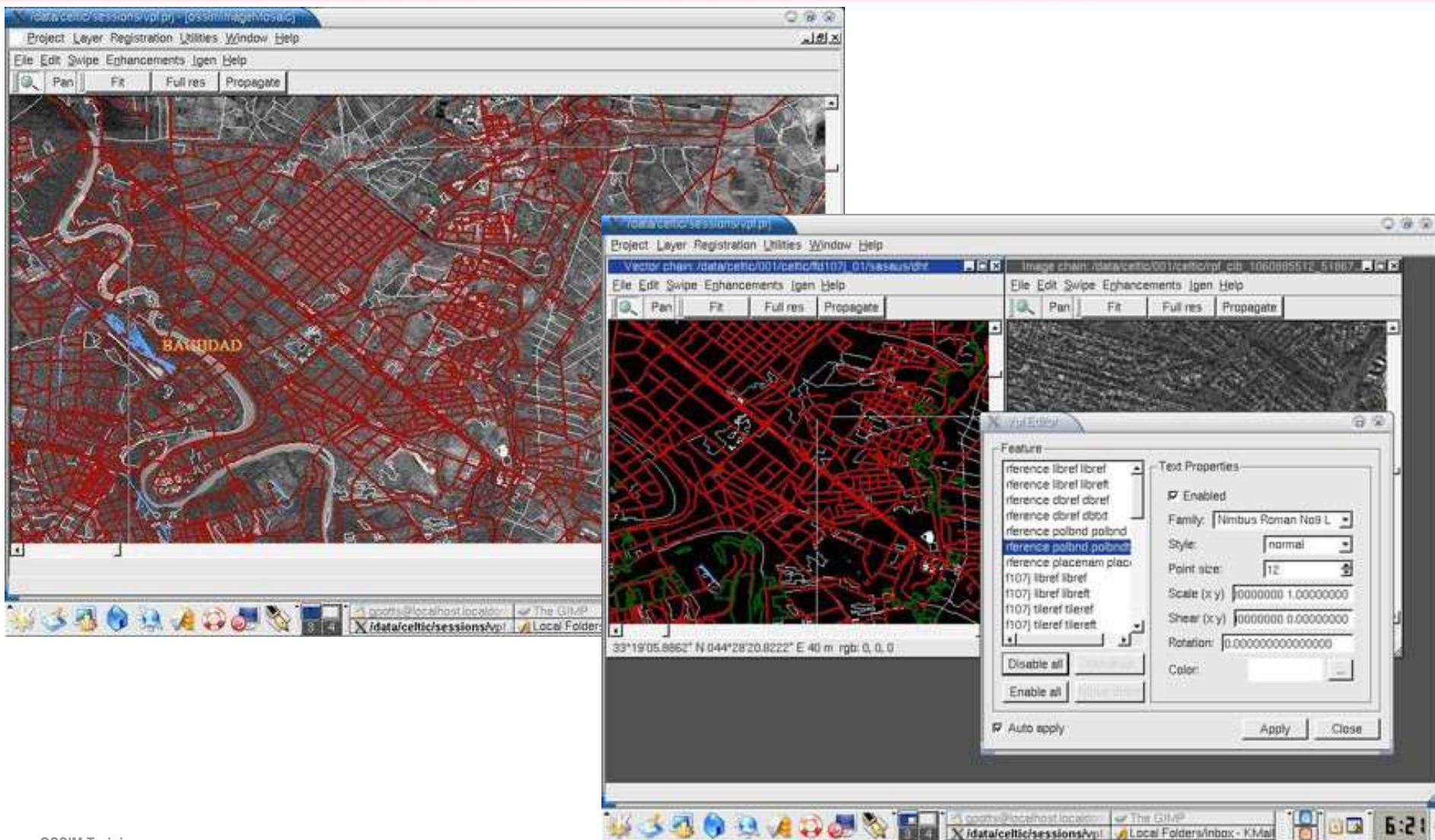


ImageLinker – Hill Shade

- Goto Edit-->Layers to get to the hillshade parameters.
- Change roughness to 0.4 and hit apply, and look at changes.
- Change azimuth to 130 and hit apply, and look at the changes.



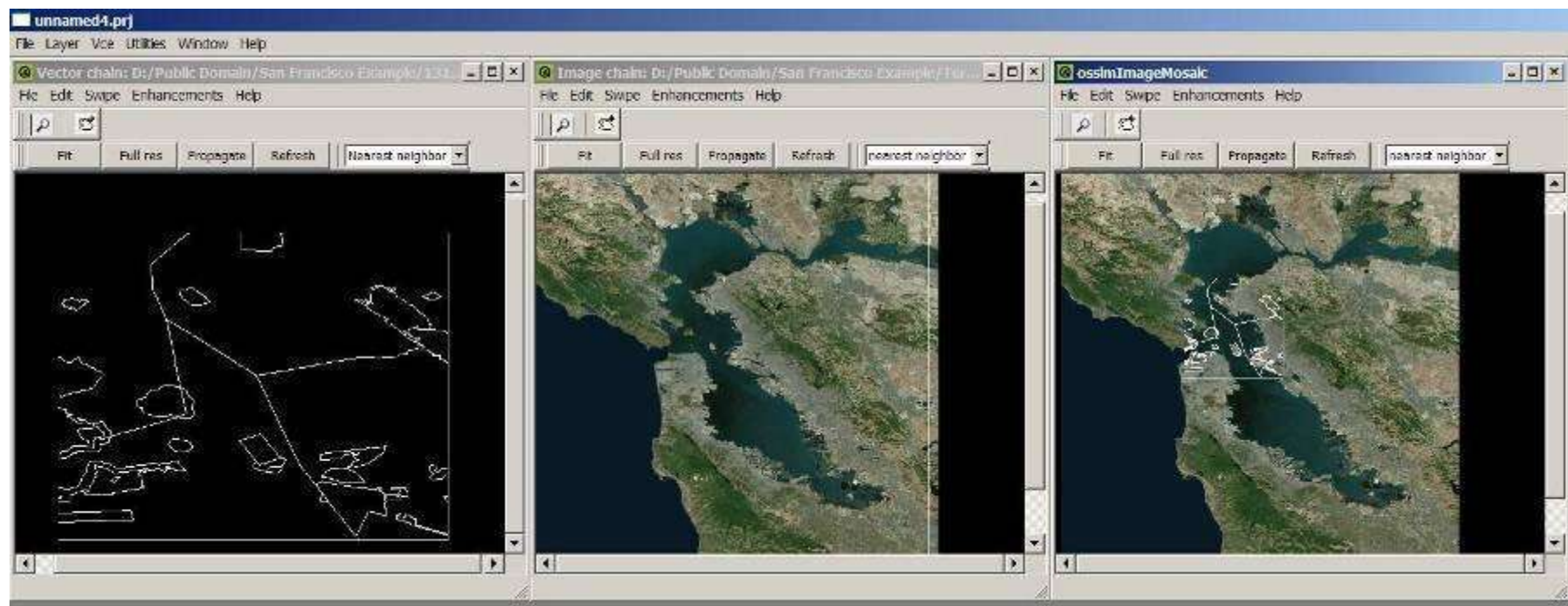
ImageLinker – Vector Support



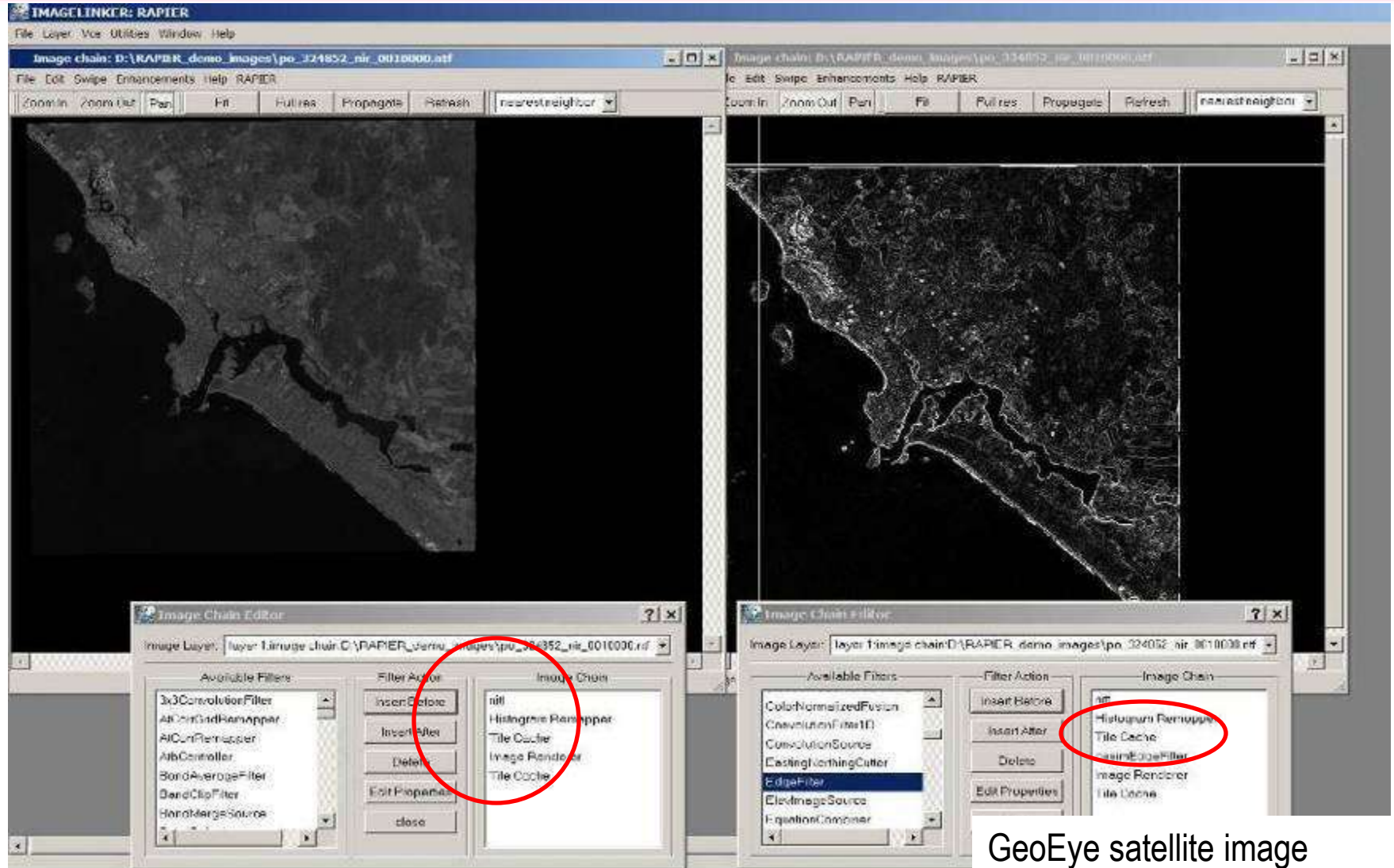
ImageLinker – Vector Support

- File → Open
- \San Francisco Example\1317597.BD.shp and \San Francisco Example\TerraColor_SanFrancisco_US_15m.tif
- Layer → Combine → Mosaic
- Select the layers
- Press Full Res and then Fit

ImageLinker – Vector Support



ImageLinker – Filters



GeoEye satellite image

ImageLinker – Filters

- File → Open Imagenes\San Francisco Example\TerraColor_SanFrancisco_US_15m.tif
- Press Full Res and then Fit
- Choose Edit → Image Chain
- Choose EdgeFilter from the left hand list and Image Renderer from the right hand list
- Click Insert After

- [illegible]

ImageLinker – Summary

- Supports extremely large imagery data (up to 4GB in size)
- Supports unique imagery formats
- Supports on-the-fly image manipulation
- Supports image overlays, etc



Internet y Intranet

Descargar archivos para hoy y mañana:

- Lecturas de hoy (1.1 y 1.2)
- imagelinker.zip
- SanFranExample.zip
- 2.1.11_imagenes.zip (para mañana)
- Tutoriales (opcional)