

## TUTORIAL

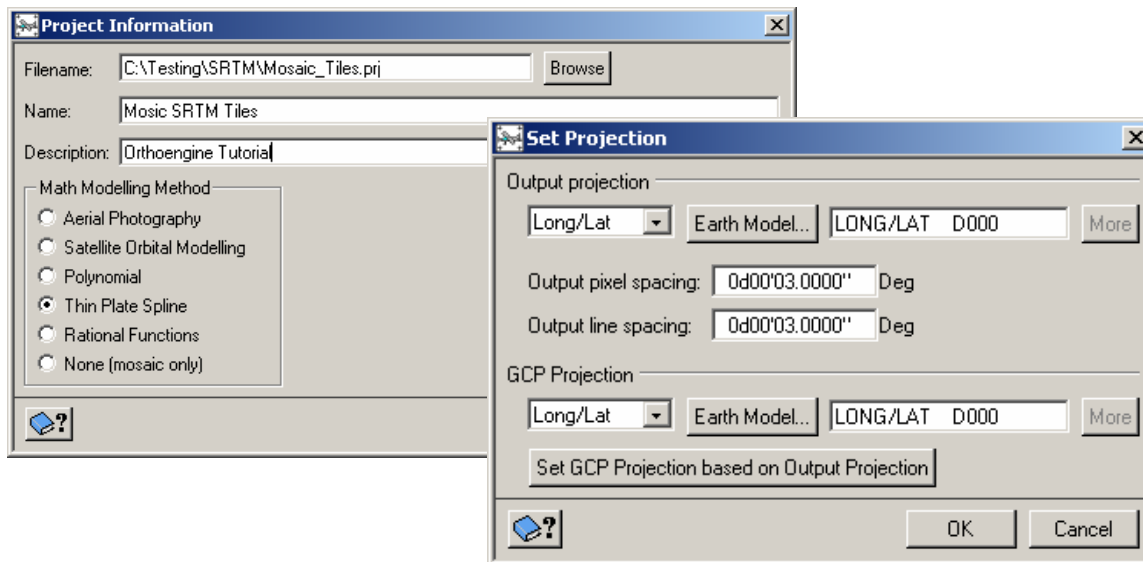
Data providers and government agencies often offer digital elevation models (DEMs) as rasters. Many raster DEMs are available without charge and can be downloaded from the Web. For example, the USGS distributes its DEM products, which are based on USGS Digital Orthophoto Quads and Quarter Quads (DOQs, DOQQs), from their Web site.

Since you may not find one raster DEM that meets your requirements, Orthoengine allows you to merge several existing DEM raster files to generate a single seamless DEM to cover your project area.

This tutorial is a guide to building DEMs from raster data and uses SRTM data found online at <ftp://e0mss21u.ecs.nasa.gov./srtm/>

### Step 1 - Project Setup

- Start OrthoEngine, and click New on the File menu to start a new project.
- Give your project a file name, and select a math model (can be Aerial Photography, Satellite Orbital Modeling, Rational Functions, or Thin Plate Spline).
- OrthoEngine will then prompt you to set up the projection information for the output files, the output pixel spacing, and the projection of your GCPs.

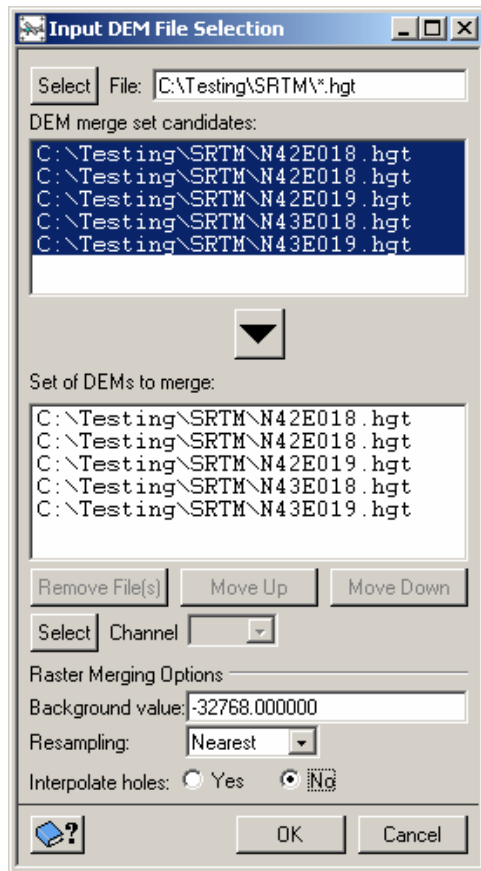


### Step 2 - Importing the SRTM DEM Tiles

To open the Input DEM File Selection window:

- On the OrthoEngine window in the Processing step list, select Import & Build DEM.
- Click the DEM from raster file icon.

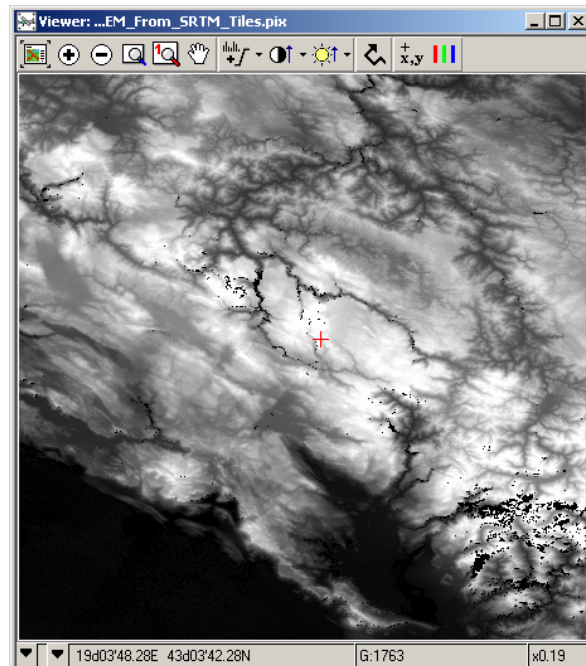
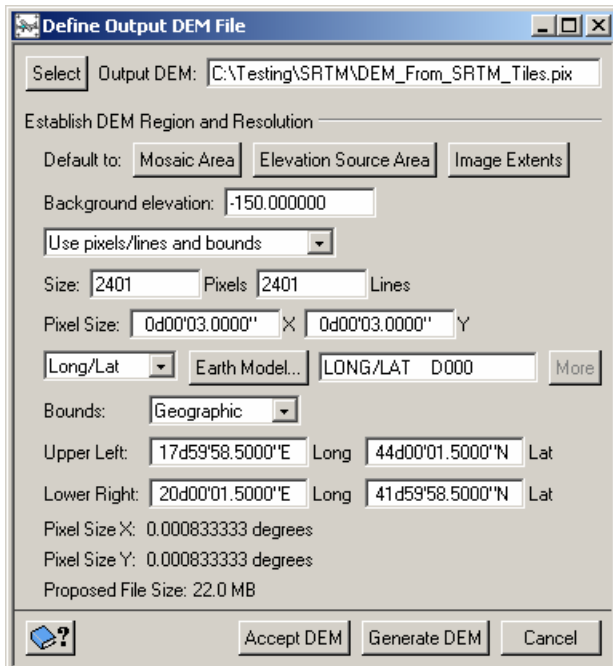
## To import raster files to generate a DEM:



- In the File box, type the path of a raster file or click Select to select a file.
- To select more than one file: In the File box, type the path with a wildcard character in the file name and press ENTER. For example, C:\Geomatica\demo\\*.pix.
- Under DEM Merge Set Candidates, click the files of your choice and click the arrow.
- Click Move Up and Move Down as required to organize the files under Set of DEMs to merge. When a raster from the bottom of the list overlaps a raster from the top of the list, the bottom raster will overwrite the top raster where the two overlap.
- In the Channel list, click the channel that you want to use or click Select.
- In the Background value box, type the value representing the "No Data" pixels in the DEM.
- In the Resampling list, click the processing method of your choice.
- In Interpolate Holes, you can click Yes to automatically interpolate data between the raster DEMs. This is recommended for small gaps, but not for large areas.
- Click OK.

## Step 3 - Generating the DEM

You will then be presented with the 'Define Output DEM File' window (shown below). Here you will specify the output name of your DEM, UL and LR. Click 'Generate DEM'.



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