

Remote Sensing Laboratory
Lab Assignment # 7
Geometric Correction

@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@

Lecturer Weerakaset Suanpaga

21 January 2011

1. Objective

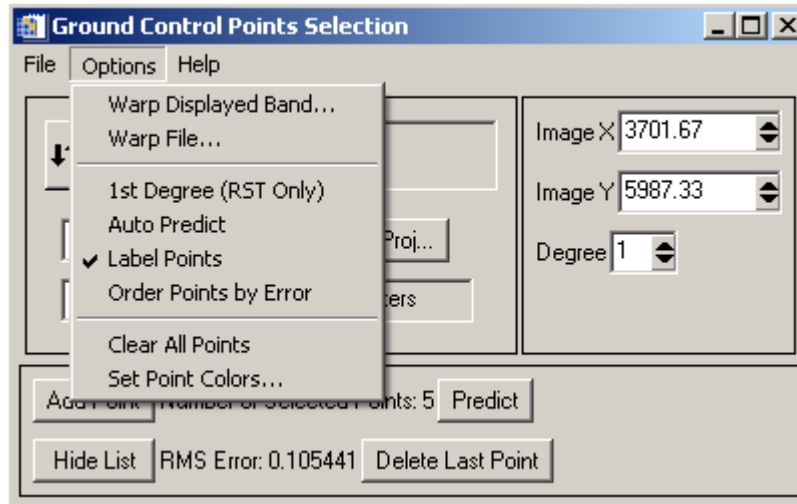
The main objective of this exercise is to familiarize yourselves with Map projection, map coordinate, geometric collection process and selection of ground control point (GCP).

2. Data provided

- Dataset of Landsat 7 ETM⁺ data
- Topographic map
THAILAND scale 1: 50,000 /CHANGWAT NONTHABURI
Edition 2-RTSD Series L7017 Sheet 5136 IV, Indian datum
(Grid 1,000m.UTM; Zone 47, Projection Transverse Mercator)

3. Methodology

1. Start image processing software ENVI 4.5
2. Open image file and save as file only interested area and close program.
3. Open interested area image file.
4. Geometric correction by
Map=>Registration=>Select GCP Image-to-map
. Select Register Projection (UTM, Indian), Meters 47N, Pixel size 30.0)
5. Collecting Ground Control Points.
6. Select common reference features in both the map and the image.
=>Typing Coordinate of map (Reading from GPS)
7. Add additional GCPs using the same procedure.
Check error by click Predict button
Error = Rms err*pixel size (30 m)
8. Minimizing RMS Error
9. Wrapping and Resampling.
Option =>Warp file



4. Result

4.1 Band Math Operations NDVI

4.2 PCA Calculation:

4.3 The color table of Pseudo color by using NDVI mark on PC1

5. Conclusion.

6. Reference: