

# New Features in TerraPhoto

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# Version 006.xxx

- Released at start of January 2006
- Requires new license keys
- All applications

# Various improvements

- **Adjust brightness to average** setting in rectification uses less memory with film camera images
- Three more decimals for inverse flattening
- Automatic tie point search support LAS block binary files
- Creation of ECW and JPEG2000 files now sets unit as foot in file header if design file master unit is foot
- Conversion to WGS84 longitude/latitude as **Projection change** type transformation
- User setting for specifying if TFW should have pixel corner or pixel center as origin point
- Coverage percentage as criteria for images to modify in **Adjust positions / Using tie points**

# Boundary in Rtile images

- Clips images with polygons on given levels
- Resulting images will have color only inside boundary polygons found on given levels

**Rtile images**

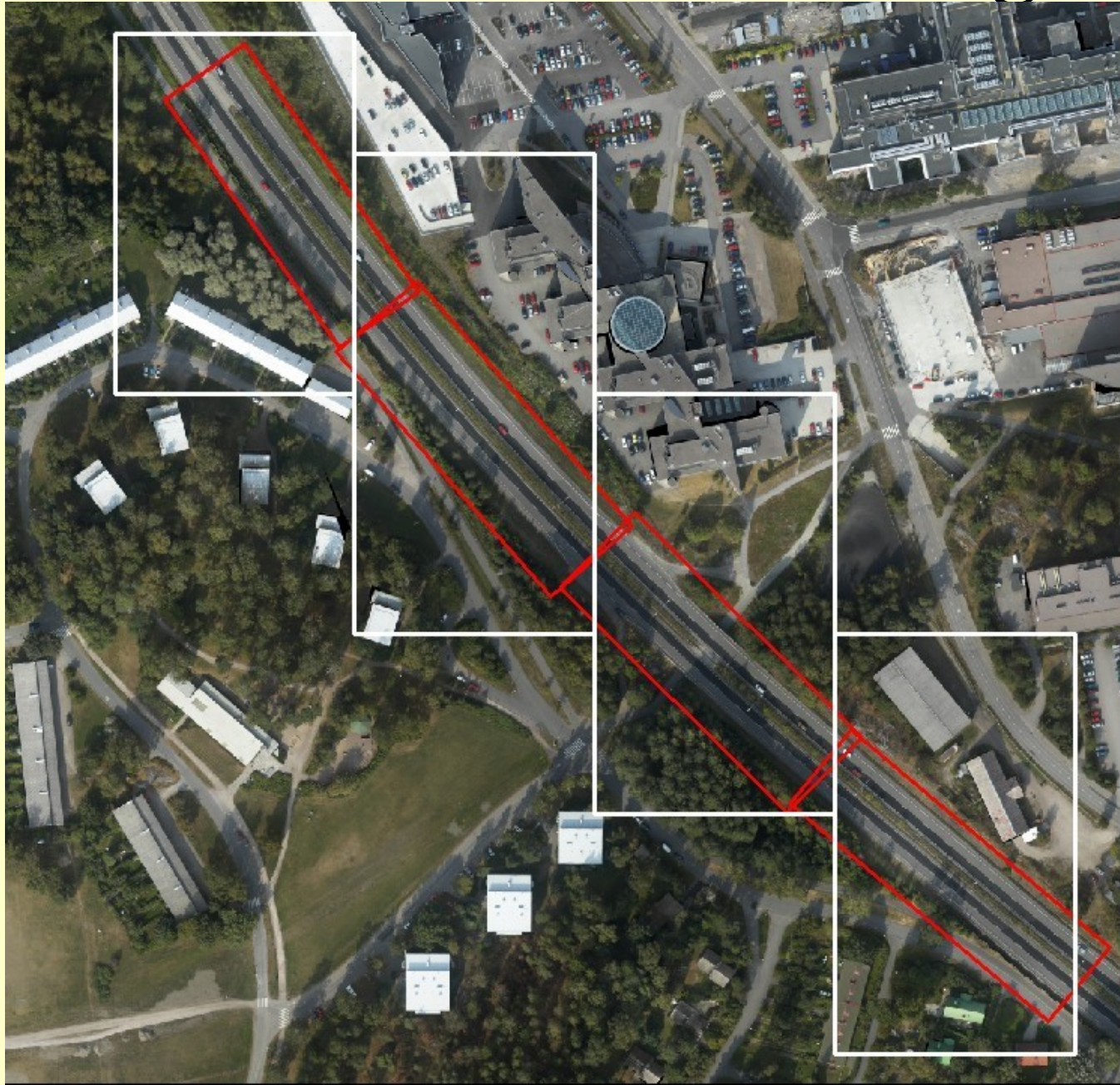
Use rasters: All references ▾  
Pixel size: 0.050 ft  
 Clip to boundaries      Levels: 1

Write as: GeoTIFF ▾      Coord system: Undefined  
 Create TFW files      Select...

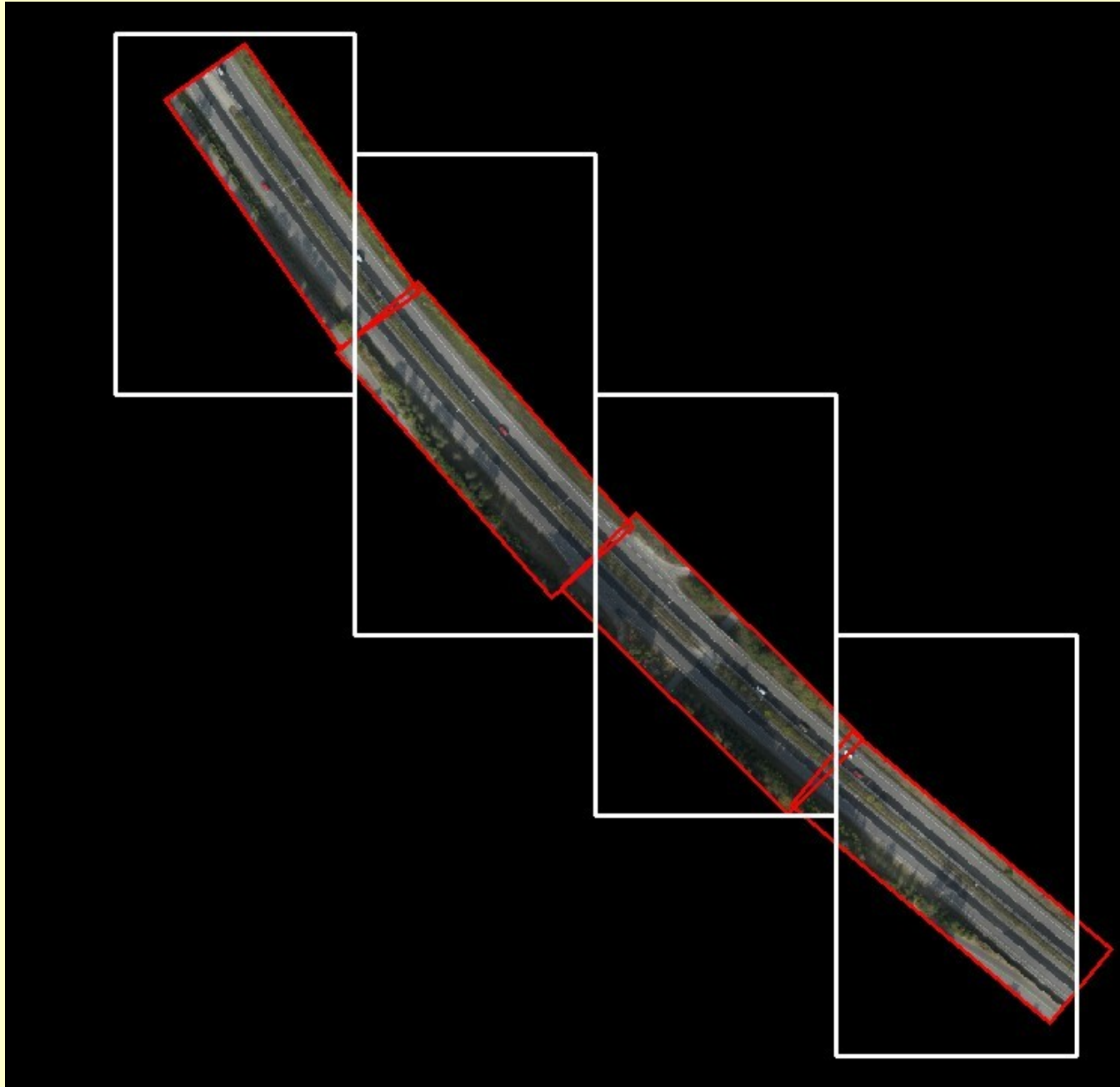
Directory: c:\      Browse...  
File naming: Increasing number ▾  
Name prefix: retile  
First number: 1

OK      Cancel

# Boundaries in Retime images



# Boundaries in Retime images





# Boundary in rectification

- Resulting image has color only inside boundary polygons found on given levels
- You can use multiple boundary polygons – inside of each will be rectified

**Rectify selected tiles**

Ortho images:

Use images: Any

Attach: As TerraPhoto references

Pixel size: 0.05 ft

Tile naming: Automatic numberin

Prefix: hut

First tile: 1

Ortho format:

Format: GeoTIFF

Create TFW files

Coord system: Undefined

Select...

Background R: 0 G: 0 B: 0

Ground model:

Search points: 50.0 ft around tile

Laser points: Keep in memory

Options:

Use surface objects Levels: 1,4

Use breaklines Levels: 10-15

Use boundaries Levels: 12

Use selection shapes

Draw text Define...

Raw image adjustments:

Adjust brightness to average

Adjust histogram Define...

Apply lens correction

Ortho image quality:

Sample pixel color

Smoothen transitions By max: 40 1-255

Least cost seamlines

Fill object gaps Upto: 3 pixels

OK Cancel

# Calibration conversion

- Sources:
  - US / Applanix calibration
  - Rollei calibration
- Convert to TerraPhoto style calibration parameters

**Conversion - C:\rollei\_1483594...**

File

**CCD / Film scan**  
Pixel size: 0.009000 mm

**Principal point**  
CK: -51.8750 mm  
Xh: 0.0830 mm  
Yh: -0.2360 mm

**Radial distortion**  
A1: -3.613600E-005  
A2: 1.175900E-008  
R0: 0.0000 mm

OK Cancel

**Conversion - C:\data\niagara\m...**

File

**CCD / Film scan**  
Pixel size: 0.009000 mm

**Principal point**  
Offset X: -0.0062 mm  
Offset Y: 0.1810 mm  
Focal length: 55.0500 mm

**Misalignment angle**  
Tx: 23.6538 arc min  
Ty: -5.8855 arc min  
Tz: 0.2826 arc min

**Lever arm**  
X: 0.2370 m  
Y: -0.0469 m  
Z: 0.0556 m

**Radial distortion**

|      |         |   |         |
|------|---------|---|---------|
| 1.00 | -0.0210 | ▲ | Add...  |
| 2.00 | -0.1690 |   |         |
| 3.00 | -0.5710 |   | Edit... |
| 4.00 | -1.3560 |   |         |
| 5.00 | -2.6520 |   | Delete  |
| 6.00 | -4.5920 | ▼ |         |

OK Cancel



# Sorting the image list

- Sort by:

- camera

- time stamp

- number

- angle from vertical

- pixel size

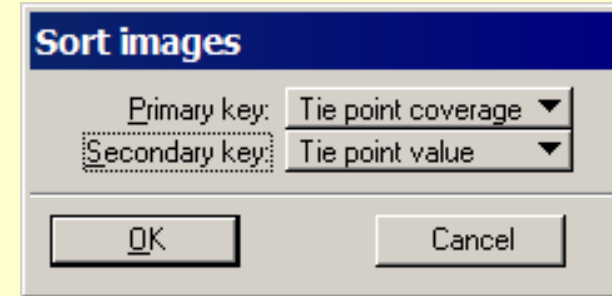
- tie point value

- tie point coverage

- time stamp

for choosing images to delete

for adding tie points to images  
which lack points or coverage



# Computation improvements

- To improve calibration consistency accross different flight altitudes:
  - Projection scale factor in mission definition
  - Refraction and earth curvature corrections