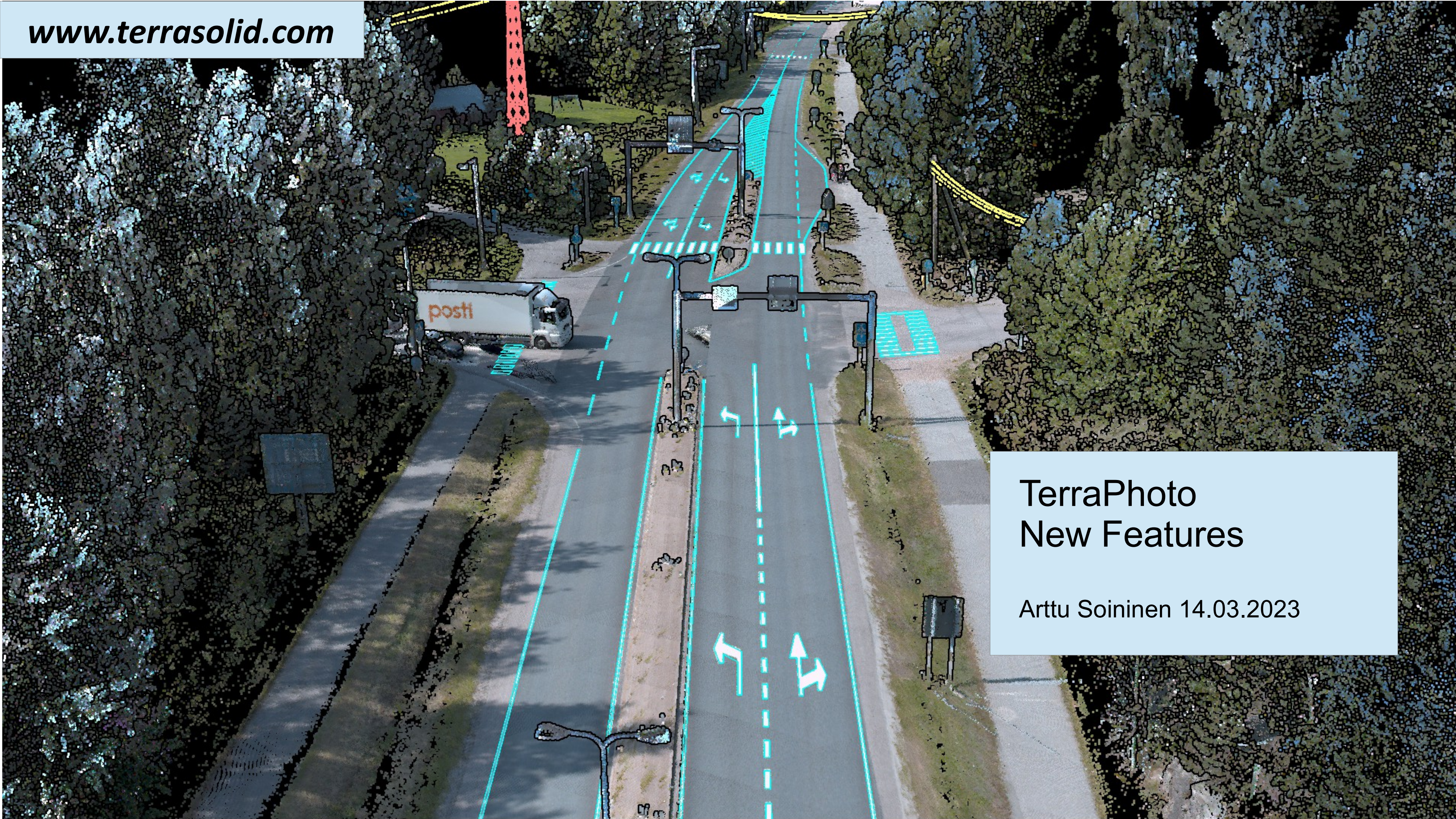
www.terrasolid.com



TerraPhoto
New Features

Arttu Soininen 14.03.2023

Setup: Public Function Header Files

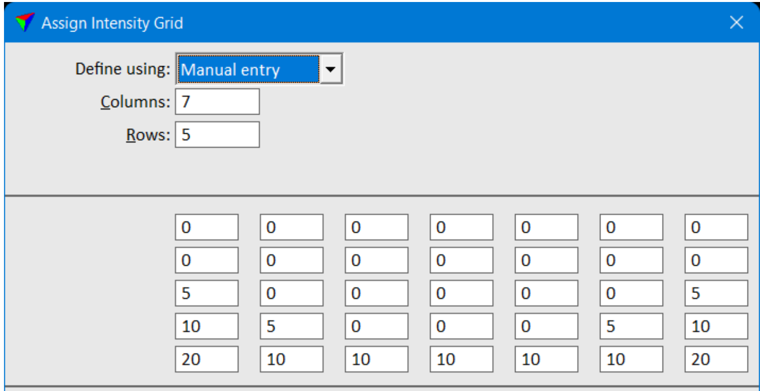
- Setup installs three C header files as documentation for public functions:
    - \terra64\include\photo_functions.h – general public functions
    - \terra64\include\photo_types.h – data types used

Various Improvements

- **Create Tile Array** has new numbering options: **East to west** and **West to east**
- **Convert time** in **Manage Camera Trajectories** shows conversion result for first time stamp
- **Manage Raster References** regonizes *.wld files as georeferencing for ortho rasters
- **Define Camera** dialog is smaller and fits better on screen on a low resolution display
- User trajecotry file formats support rotation as quaternion values
- Support for Alpha channel in ECW/JPEG2000 images

Intensity Correction Grid

- **Intensity grid** button in **Define Color Corrections** has new option **Manual entry** for manual intensity correction grid
- Correction grid changes brightness of different parts of raw images whenever TerraPhoto makes use of a raw image
- Correction is saved in an image list file



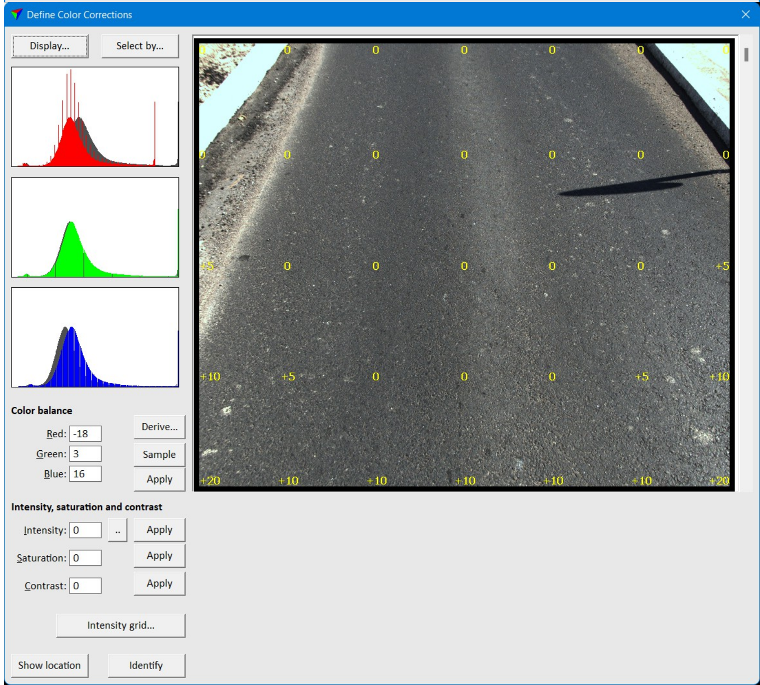
Assign Intensity Grid

Define using: Manual entry

Columns: 7

Rows: 5

0	0	0	0	0	0	0
0	0	0	0	0	0	0
5	0	0	0	0	0	5
10	5	0	0	0	5	10
20	10	10	10	10	10	20



Define Color Corrections

0	0	0	0	0	0	0
0	0	0	0	0	0	0
+5	0	0	0	0	0	+5
+10	+5	0	0	0	+5	+10
+20	+10	+10	+10	+10	+10	+20

Color balance

Red: -18

Green: 3

Blue: 16

Intensity, saturation and contrast

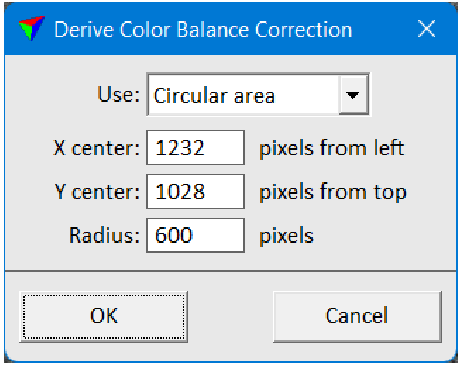
Intensity: 0

Saturation: 0

Contrast: 0

Derive for Color Balance Correction

- **Derive** button in **Define Color Correction** can compute a grey balance correction for selected images
- You specify an area of the image which should be grey
- Useful for mobile images which should always see an asphalt road surface



Derive Color Balance Correction

Use: Circular area

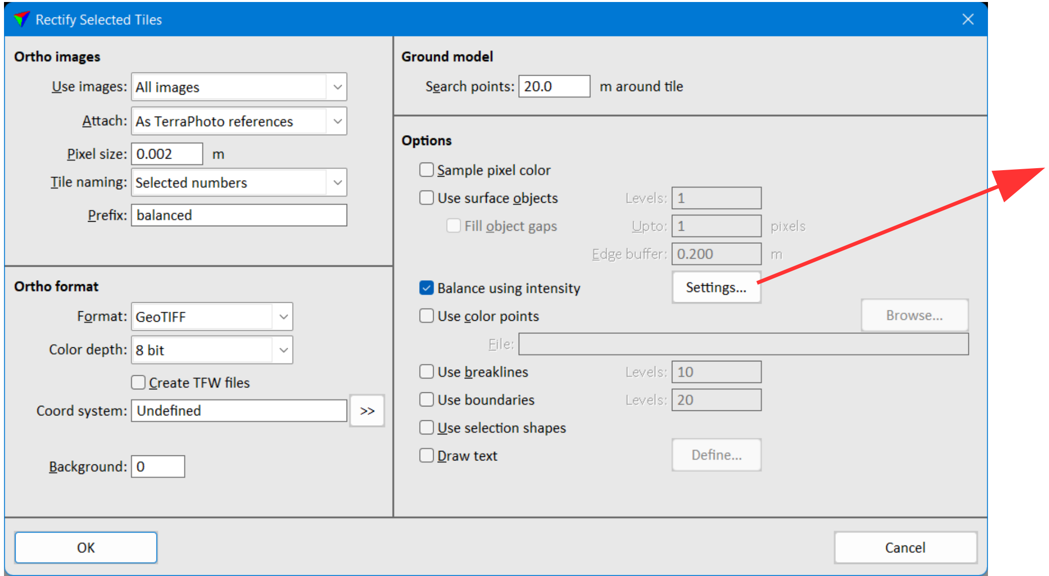
X center: 1232 pixels from left

Y center: 1028 pixels from top

Radius: 600 pixels

Intensity Balanced Ortho

- **Rectify mosaic** can produce an orthophoto where local brightness comes from laser intensity
- Can produce an orthophoto which does not suffer from changes in brightness as much as camera images
- Laser intensity gives local brightness
- Camera image gives color and relative brightness of each pixel to its surrounding
- You can choose to produce a grey scale ortho or a color ortho



Rectify Selected Tiles

Ortho images

Use images: All images

Attach: As TerraPhoto references

Pixel size: 0.002 m

Tile naming: Selected numbers

Prefix: balanced

Ortho format

Format: GeoTIFF

Color depth: 8 bit

☐ Create TFW files

Coord system: Undefined >>

Background: 0

Ground model

Search points: 20.0 m around tile

Options

☐ Sample pixel color

☐ Use surface objects Levels: 1

☐ Fill object gaps Upto: 1 pixels

Edge buffer: 0.200 m

☑ Balance using intensity Settings...

☐ Use color points Browse...

File:

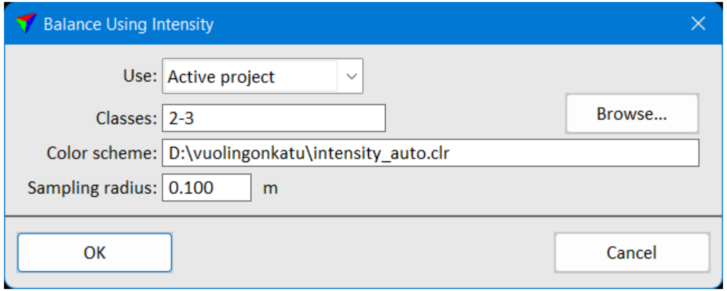
☐ Use breaklines Levels: 10

☐ Use boundaries Levels: 20

☐ Use selection shapes

☐ Draw text Define...

OK Cancel



Balance Using Intensity

Use: Active project

Classes: 2-3 Browse...

Color scheme: D:\vuolingonkatu\intensity_auto.clr

Sampling radius: 0.100 m

OK Cancel

Intensity Balanced Ortho

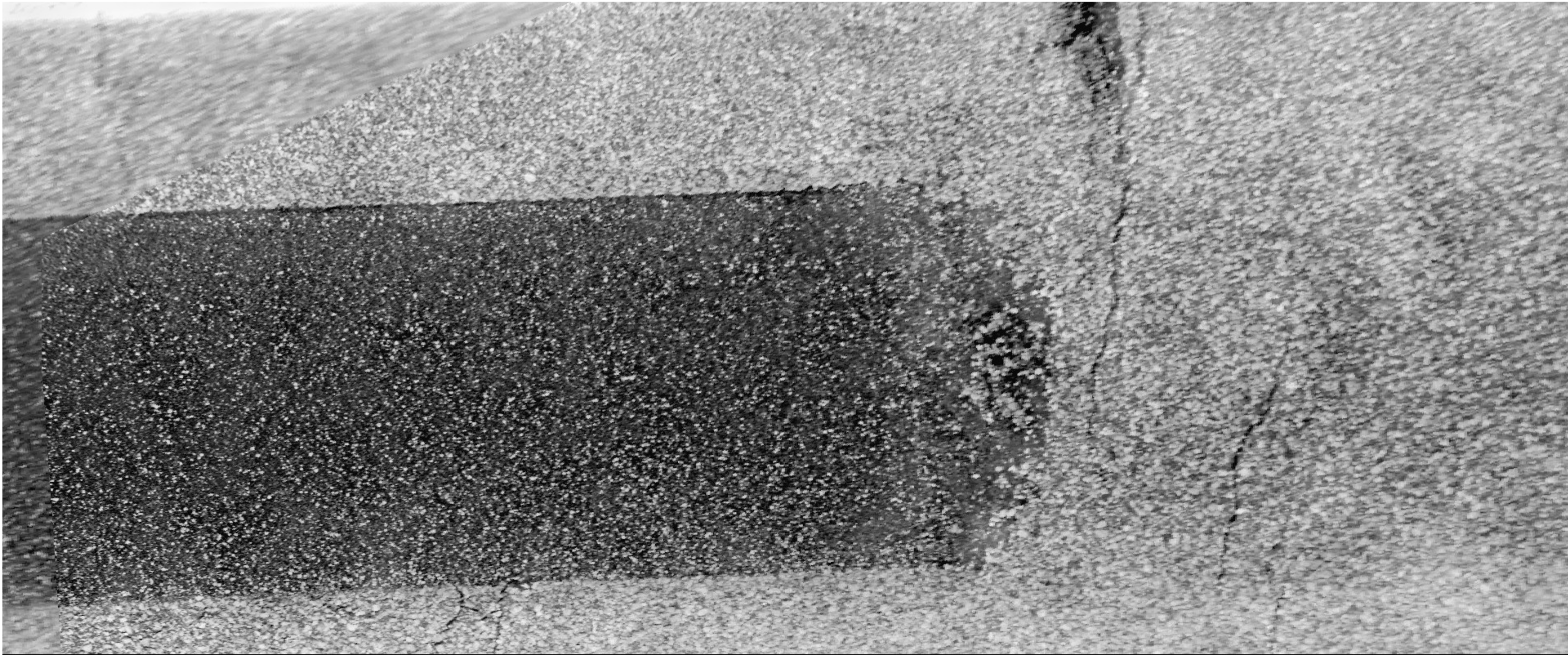
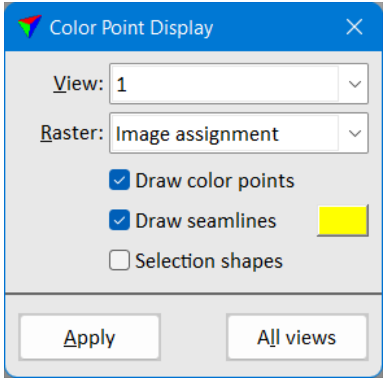


Image Colors

- Each image in the image list gets its own display color from a table of 61 colors
- Color information is saved when you save an image list
- **Define color points** mode will use this when coloring by image assignment
- **Change image color** lets you swap an image color



Color Point Display

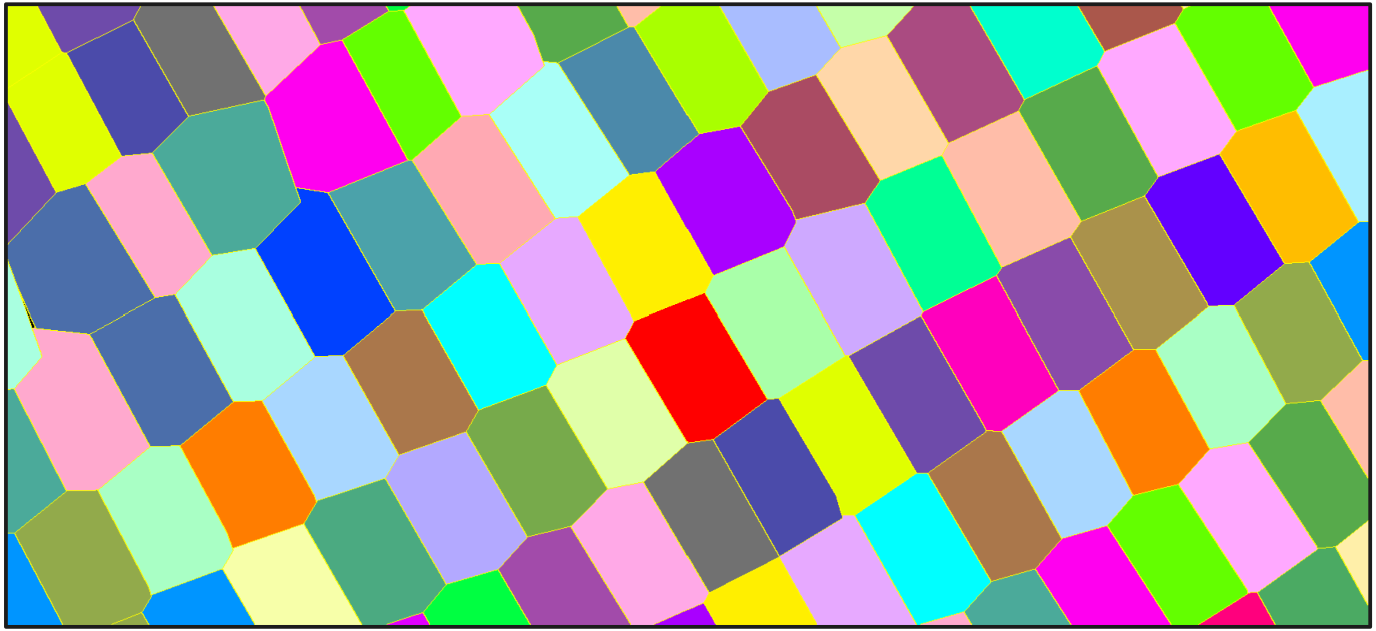
View: 1

Raster: Image assignment

☑ Draw color points

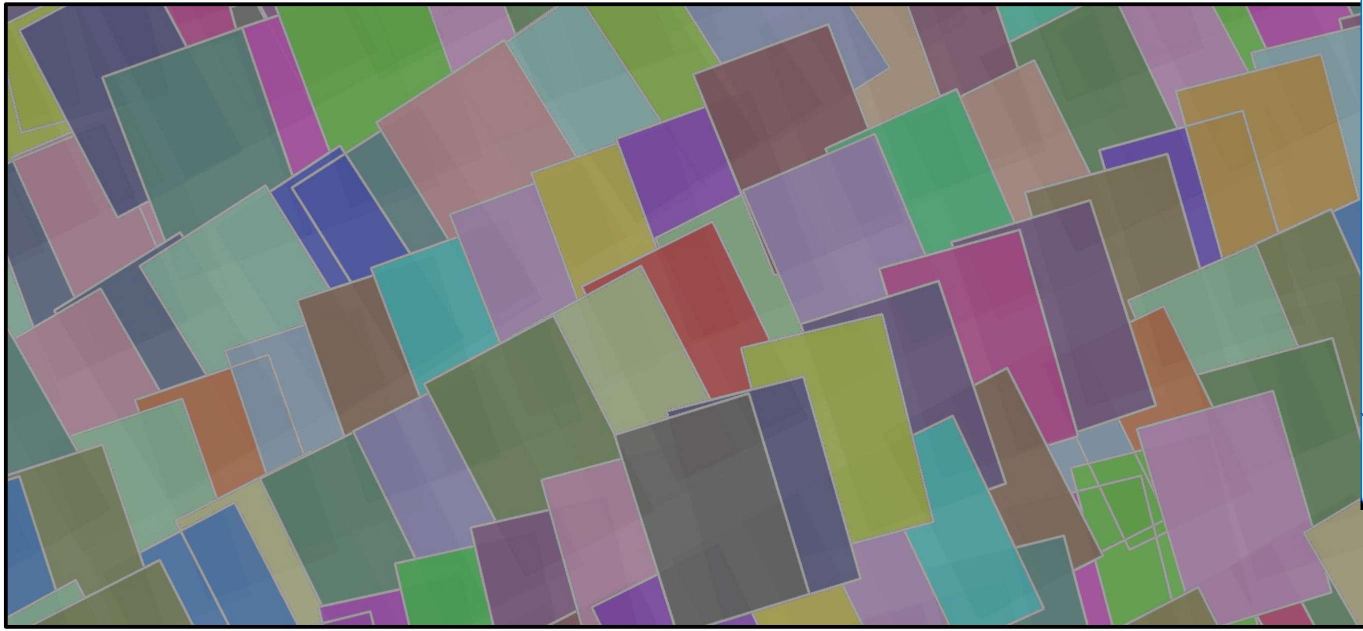
☑ Draw seamlines 🟨

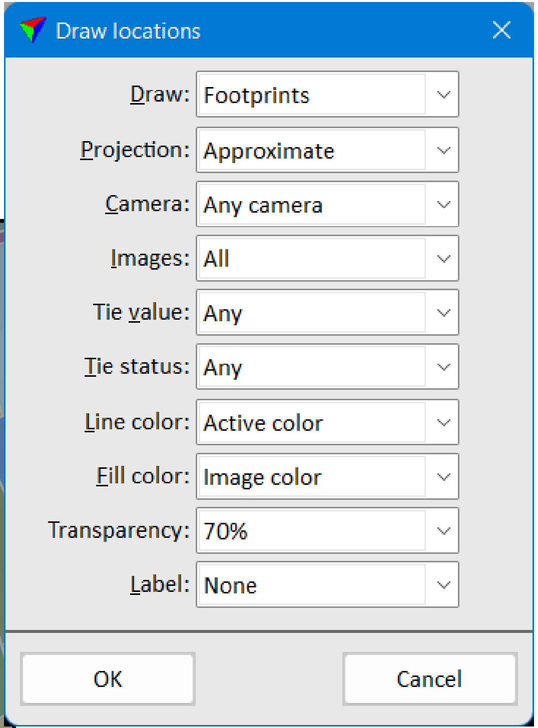
☐ Selection shapes



Improvements in 'Draw locations'

- You can choose how line color and how fill color is selected
- You can choose **Image color**
- You can specify transparency level in MicroStation version





Draw locations

Draw: Footprints

Projection: Approximate

Camera: Any camera

Images: All

Tie value: Any

Tie status: Any

Line color: Active color

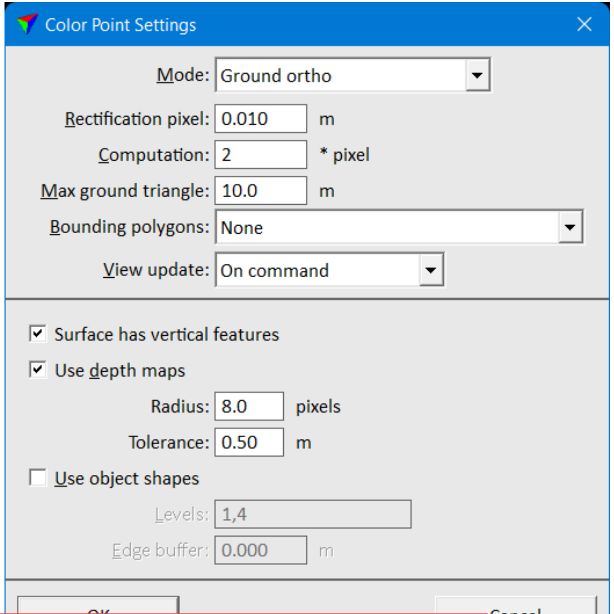
Fill color: Image color

Transparency: 70%

Label: None

Depth Maps in Ortho Production

- Produce a true ortho without vectorizing buildings
- Workflow:
  - Classify building roofs (and bridges) carefully
  - Compute depth maps using class 6 – Building (and 11 – Bridges)
  - Set **Use depth maps** on when working with color points
  - Set **Use depth maps** on in **Rectify orthomosaic**



Color Point Settings

Mode: Ground ortho

Rectification pixel: 0.010 m

Computation: 2 * pixel

Max ground triangle: 10.0 m

Bounding polygons: None

View update: On command

☑ Surface has vertical features

☑ Use depth maps

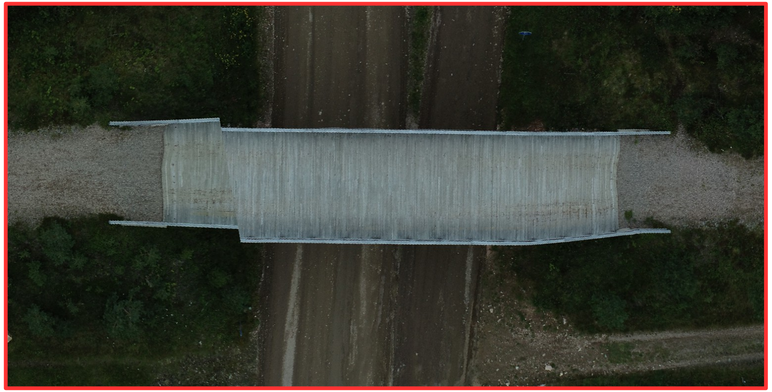
Radius: 8.0 pixels

Tolerance: 0.50 m

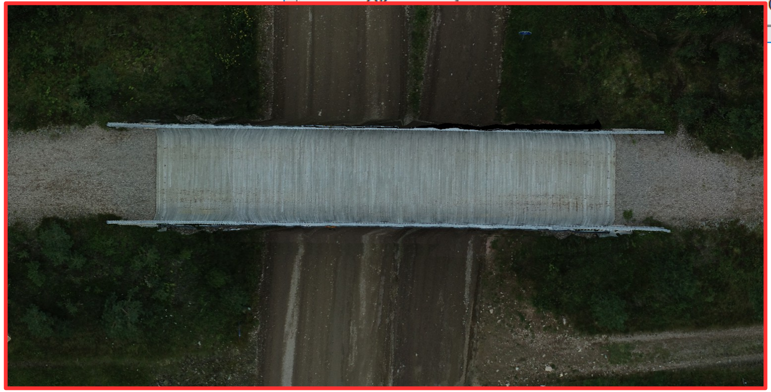
☐ Use object shapes

Levels: 1,4

Edge buffer: 0.000 m



Normal ortho rectified to ground



Top surface ortho with depth maps