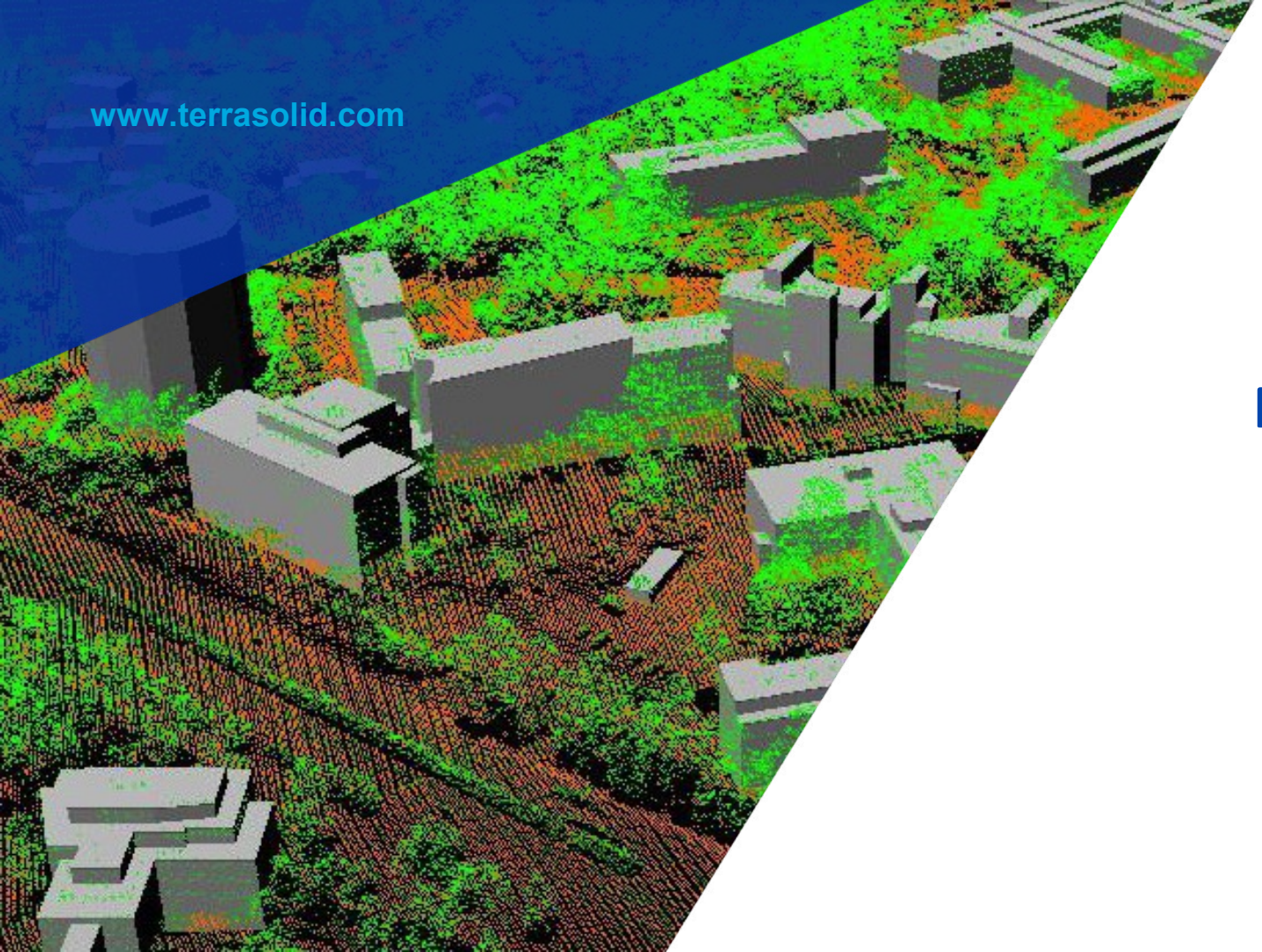


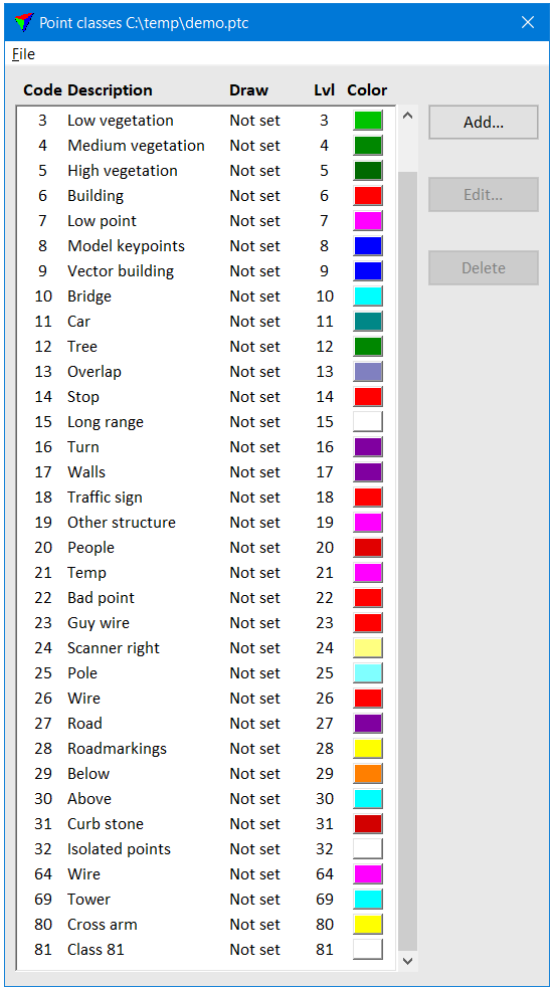
TerraScan
New Features

Arttu Soininen 13.10.2020

Terra solid
POINT CLOUD INTELLIGENCE

Resizable Windows

- TerraScan Main Window
- Manage Trajectories
- View Positions
- Define Classes
- Check Tunnel Sections
- Check Building Models
- Inspect Groups
- Define Macro

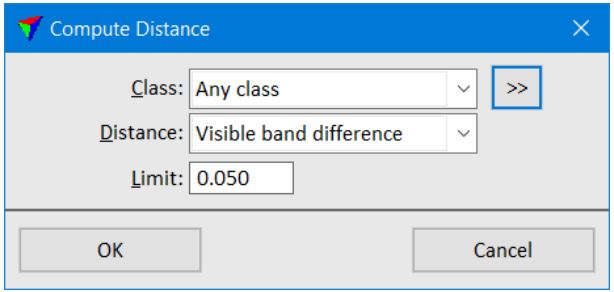


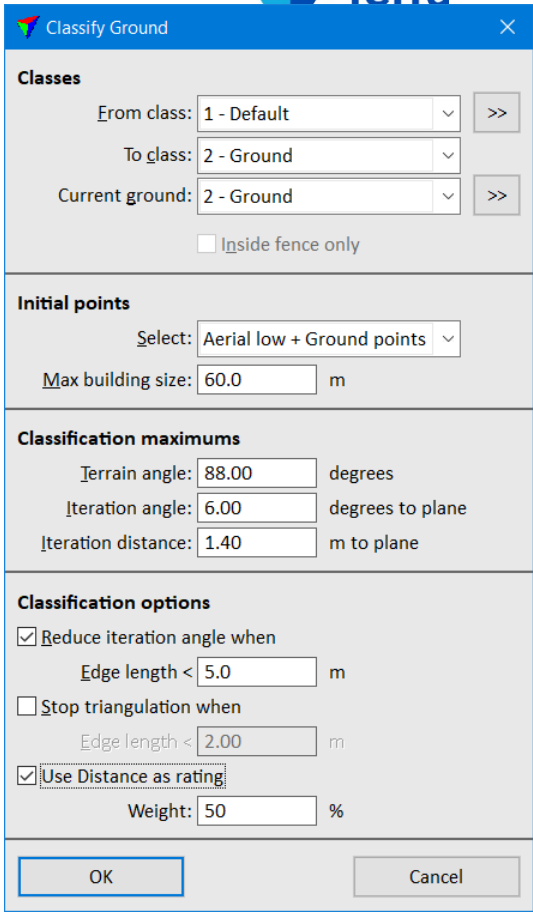
Terra solid
POINT CLOUD INTELLIGENCE

Vegetation Index in Ground Classification

- Ground classification can make use of vegetation index as a probability factor for how likely a point is to be ground
- Improves result with a photogrammetric point cloud

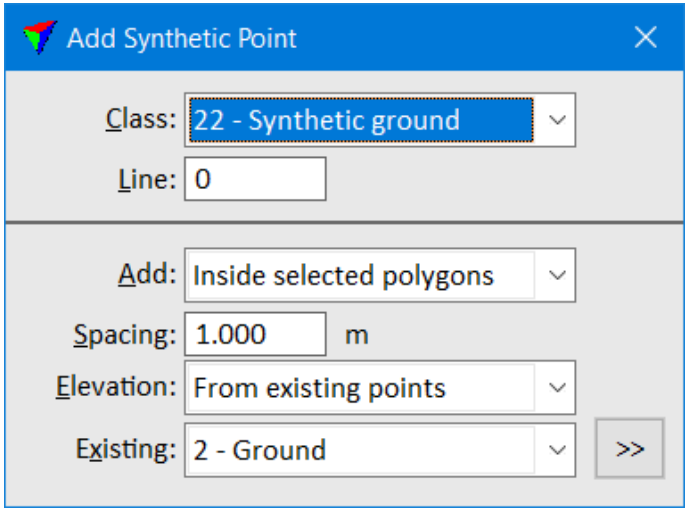
- Steps:
  - Use **Compute distance** to store vegetation index as distance value
  - Use **Smoothen points** to smoothen distance values
  - Run ground classification with **Use Distance as rating** on





Improvements in Add Synthetic Points

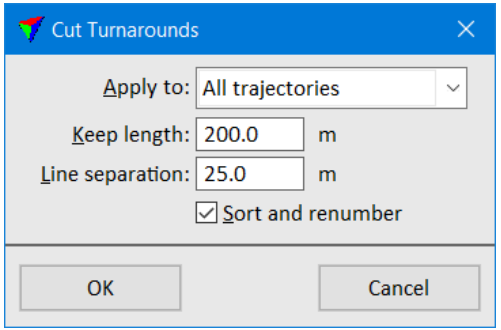
- **Add Synthetic Point** can add multiple points in operation
- **Along selected vectors** adds points along selected 3D vectors at given spacing
- **Inside selected polygons** adds points in a grid pattern inside selected polygons

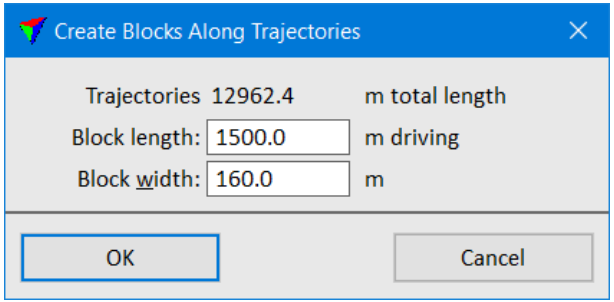


Faster Mobile Project Creation

- **Cut turnarounds** has new logic which works better for mobile trajectories
- **Create along trajectories** draws block boundaries based on trajectory information alone

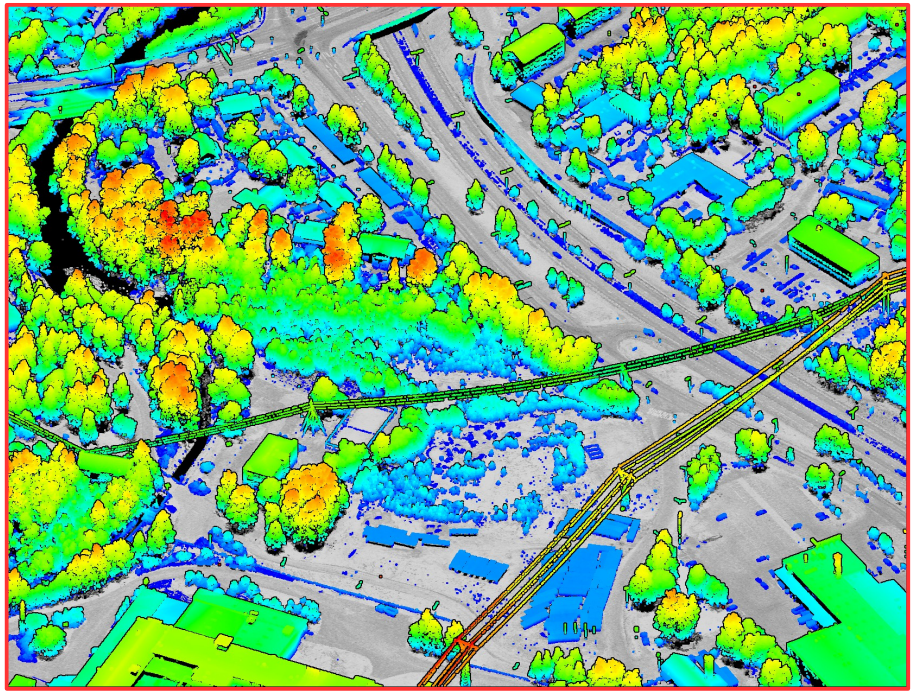
- Workflow:
  - Import trajectories
  - Run **Cut turnarounds**
  - Run **Create along trajectories** to draw block boundaries into design file
  - (Optional) Modify block boundaries if needed
  - Use **File / New project** to enter project information
  - Use **Block / Add by boundaries** to add block boundaries to project
  - Save project definition
  - Import points into project

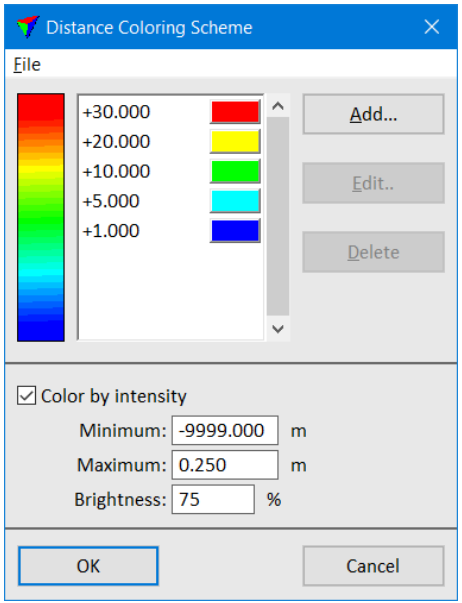




Smooth Distance Coloring

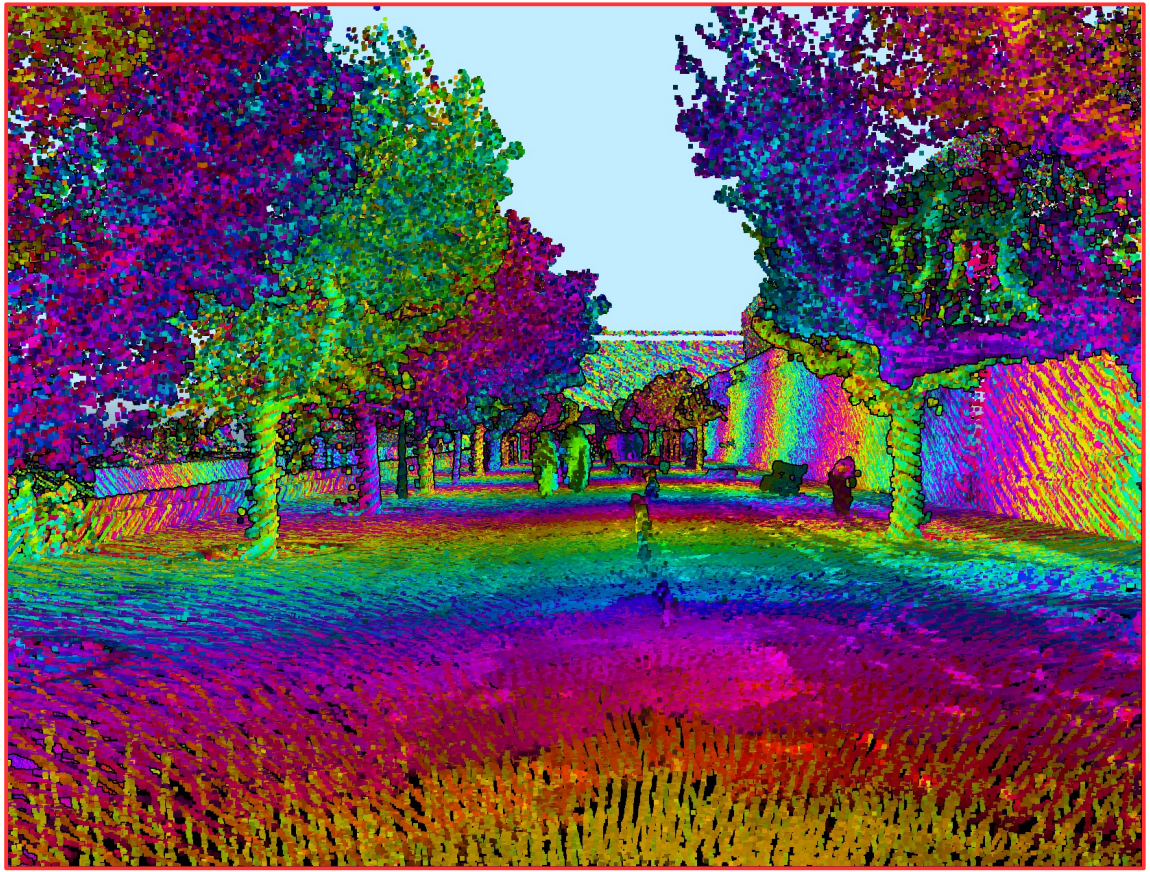
- Distance coloring uses smoothly changing RGB color scheme now
- You can optionally specify a distance range to be displayed by intensity





Coloring by Time

- **Display Mode** has two new color by choices: **Time** and **Time+Intensity**
- Coloring is based on time stamp
- You specify how fast color changes

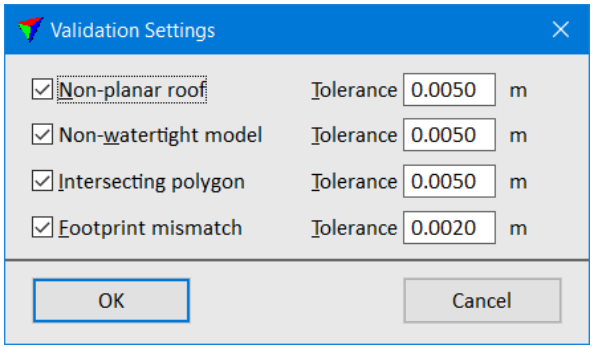


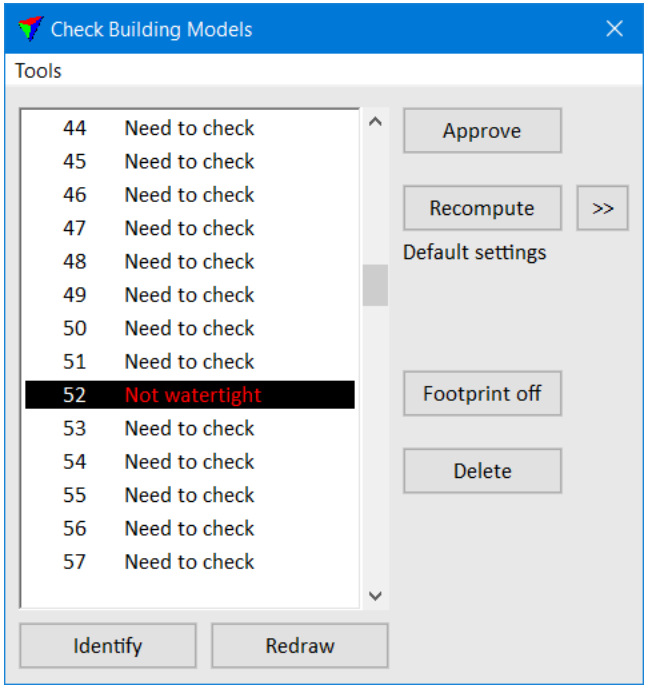
Coloring by Density

- Computes an approximate local point density for each point
- Bright means high density
- Dark means low density

Geometric Improvements in Vectorizing Buildings

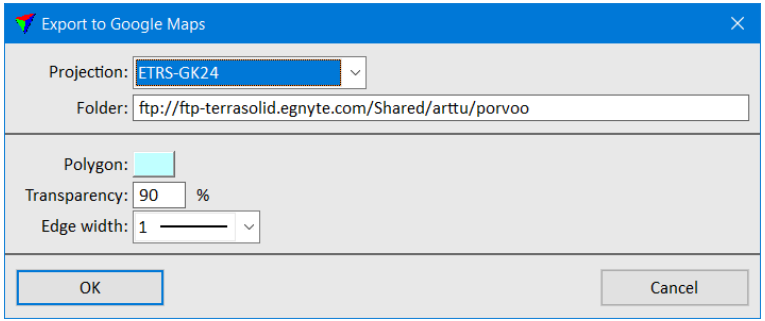
- **Vectorize Buildings** tool creates cleaner vector models (=fewer geometric flaws)
- **Check Building Models** checks buildings for two new types of geometric flaws:
  - Non-watertight model
  - Roof polygons crossing each other





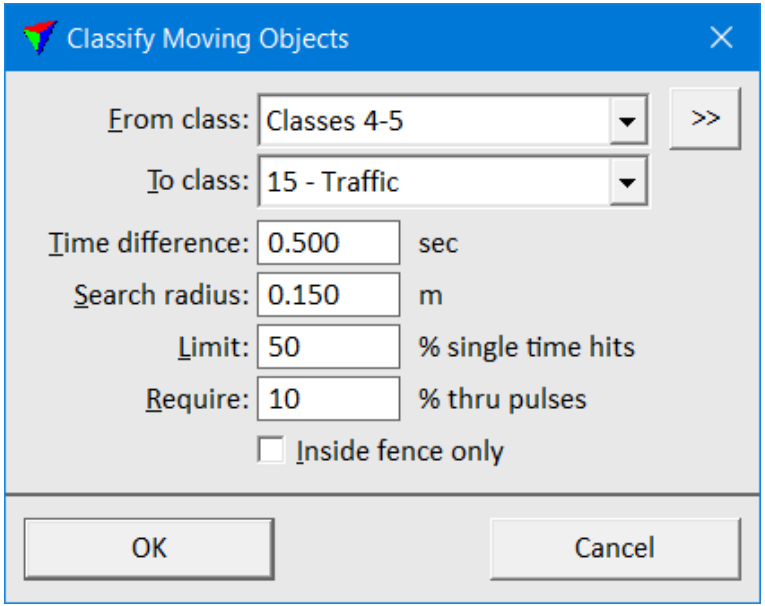
Export to Google Maps

- Menu command in **Define Project**
- Creates one KML file which contains project block polygons with a link to an FTP site
- Provides a simple way to publish point clouds on Google Maps – viewer can download point cloud data thru clicking on a polygon



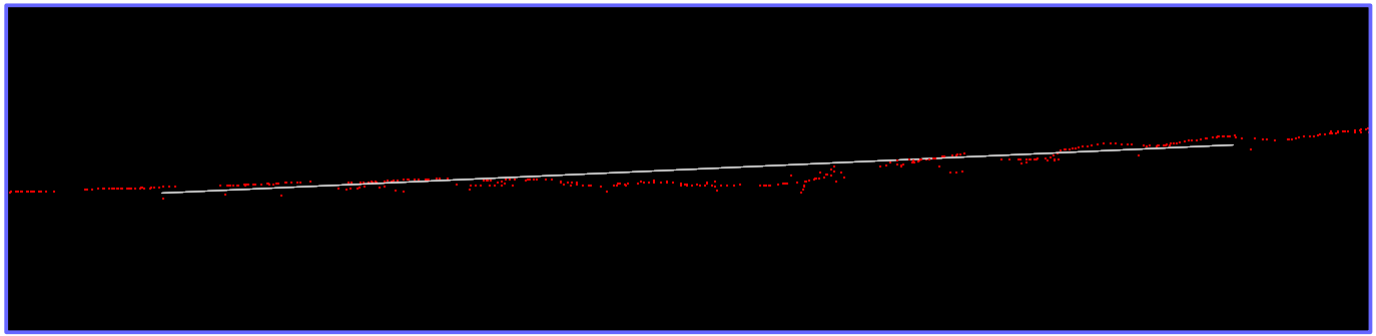
More Control in Classifying Moving Objects

- You can specify what percentage of points must be single time hits
- You can specify what percentage of points must have thru pulses closeby



Road Bumps and Potholes

- **Compute distance** tool can compute how much each point on a road surface differs from a line fitted to a narrow longitudinal section along the road
- Bumps get a positive value – point is above fitted line
- Potholes/depressions get a negative value – point is below fitted line
- Computation requires:
  - Hard surface classification is done
  - Height from ground classification is done (to include points very close to the hard surface)



Visualizing Bumps and Potholes

- Coloring by distance gives you an ability to view bumps and potholes
- **Export raster image** from main window and **Export raster images** from project window can produce orthophotos with the same distance coloring