New Features in TerraMatch
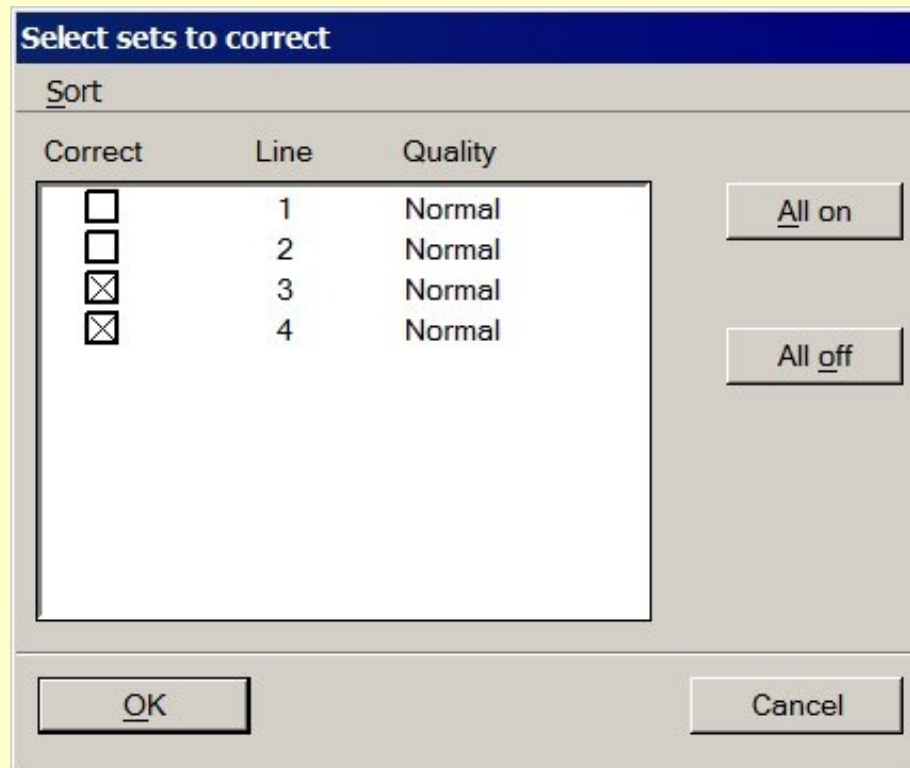
Arttu Soininen

Software developer

Terrasolid Ltd

Tie line improvements

- **Position / Delete / By range** menu command
- **Position / Delete / By scanner** menu command

- Ability to enter elevation of ground level tie line observations in non top view windows

Select Sets in Find Tie Line Match

- Select which sets to move and which to keep fixed
    - Keep lines 1-2 fixed and solve correction for lines 3-4
    - Keep day 1 fixed and correct days 2 and 3
    - Solve correction for scanner 1 to match scanner 2

Restore Observation Values

- Restores original observation values from a tie line file saved earlier

- Helps in filtering bad tie lines

- Workflow:

  1. Collect tie lines and save to a file

  2. Solve correction

  3. Apply correction to loaded tie lines

  4. Search for worst observations and remove bad ones

  5. Restore original observations from file saved in step 1

  6. Save filtered tie lines

Apply Correction to Trajectories

- **Apply Correction** supports applying a correction to trajectories

- Corrections for trajectory drift should be applied to trajectories if planning to use trajectories further for any task requiring accuracy
  - Classify points by range from scanner
  - Classify obstructing objects too close to the railroad
  - Add lever arm to derive rail position

Automatic Search for Signal Markers

- Automatic search for known pattern control points

- Software finds location (and rotation) with biggest intensity difference between bright and dark polygons

- Rotation can be fixed or come from closest trajectory travel direction

Import known points
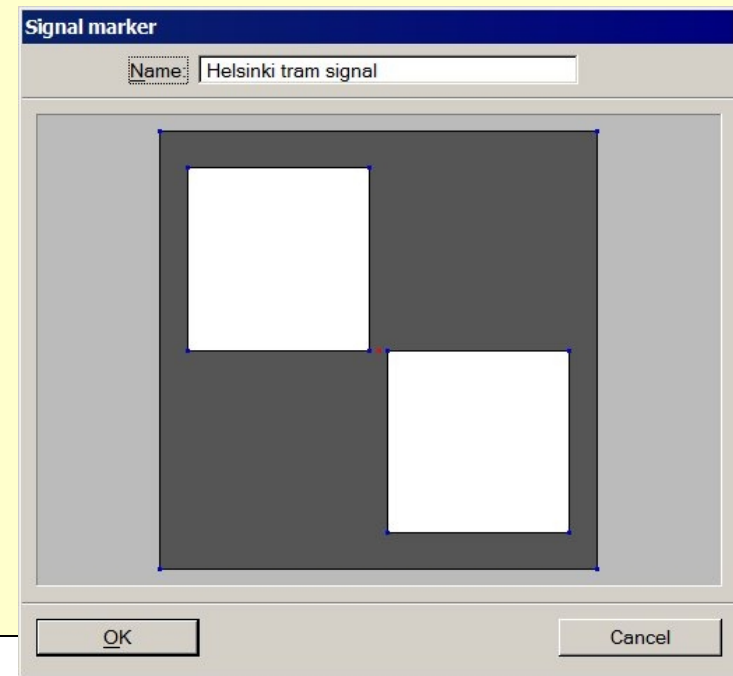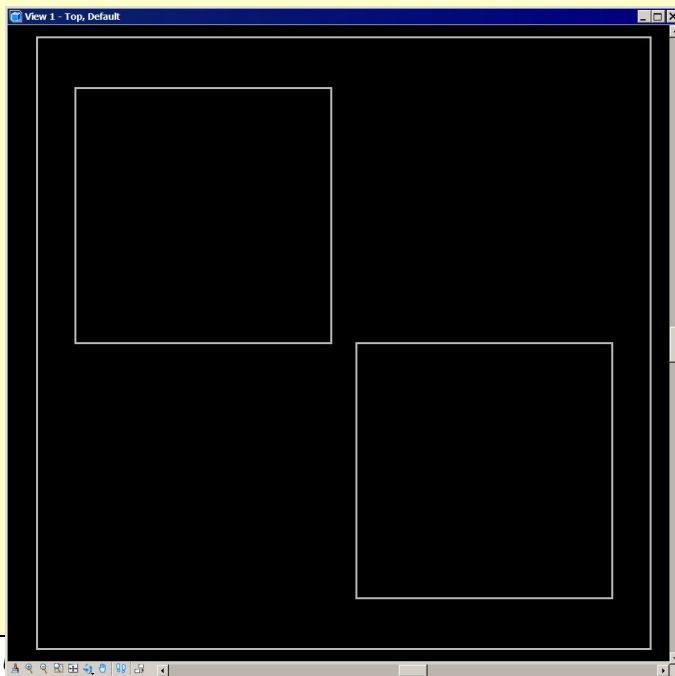
Point type: Known xy
Signal marker: Helsinki tram signal
Rotation: Travel direction
Min contrast: 10

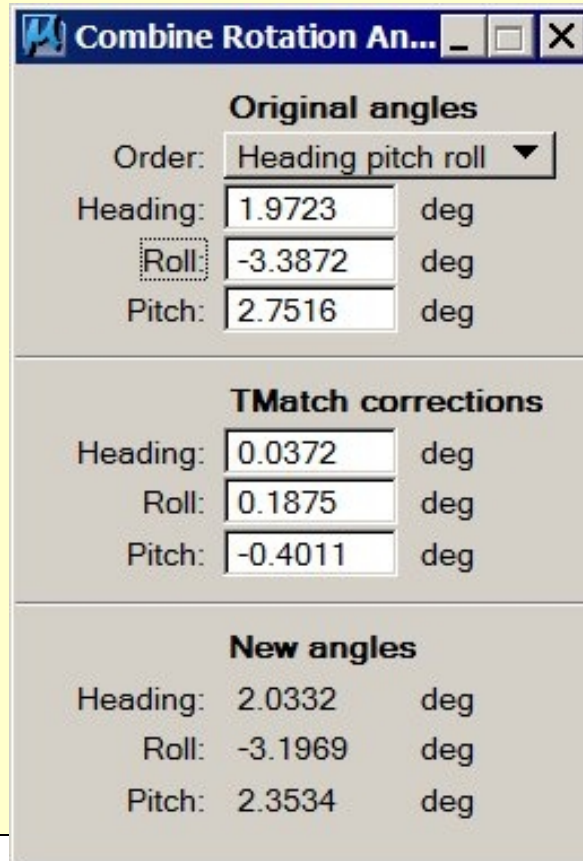Use: Loaded points

Require: 400 points/m²

OK

How to Define a Signal Marker

- Draw signal pattern in a top view window
- Draw polygons for bright areas
- Draw larger polygon for dark surrounding
- **Settings** tool and **Signal markers** category
- Select all polygons
- Select **Add**
- Click at location of the control point

Combine Rotation Angles

- Currently keyin command, under development
- Combines system misalignment angles and TerraMatch corrections to derive new system misalignment angles