POINT CLOUD INTELLIGENCE

DATA FUSION

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GEOSPATIAL WORLD FORUM
2-5 May 2023, Rotterdam, The Netherlands
Merging Point Clouds from Different Sensors

- Different sensors see different surfaces – merging produces a more complete model
- Merging requires planning and many decisions on how to merge
- Matching positioning is of vital importance
- Time difference between surveys complicates process

Airborne laser - white/mobile laser - red
ALL POINT CLOUDS
NO MATTER THE SOURCE
NO MATTER THE SENSOR
NO MATTER THE SIZE
Different sources
Airborne + Mobile
Different sources
Photogrammetric + Airborne
Diversity of tools to merge the pointclouds

- **TerraScan**
  - On loaded points (smaller projects)
  - No need trajectory or timestamps info (suitable for photogrammetric pointclouds)

- **TerraMatch**
  - Possibility to run on project
  - Trajectory information is used in matching process
  - Can use different sources as reference
MANUAL
drag & drop

SEMI-AUTOMATIC
Match to GCPs

AUTOMATIC
Fit to reference
Drag & drop Rotate & Translate
Automatic Fit to reference
Merge different types of pointclouds Group
Which Points to Keep in Merged Data Set?

- Point clouds from different sensors overlap in many places
- Often best to use data from one sensor only on one surface
- Best to cut overlap (principles)
  - Manual cut – user draws polygons for cutting
  - By quality – keep data from more accurate sensor, remove all closeby points from another less accurate sensor
  - Can specify quality by time: latest is the best
  - By range – keep shorter measurement range points, remove all closeby points with longer measurement range
  - By density – keep data from locally highest density sensor, remove all closeby points from lower density sensor
  - By class – example: keep specific sensor on wall and on roof surfaces
Welcome to booth 39A

Thank you for your attention!
THE INDUSTRY STANDARD SOFTWARE FOR
POINT CLOUD AND IMAGE PROCESSING
TERRASOLID SOFTWARE RUNS ON CAD

Bentley

MicroStation, PowerDraft, etc.
Channel Partner
Product Robustness

Integrated
Customizable
Inexpensive