

# Leica Rail:Factory & ATrack

## Rail assessment software for Mobile Mapping Sensors

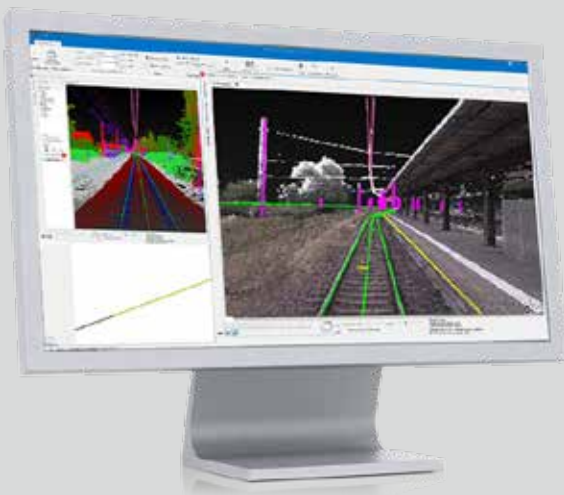


### COMPREHENSIVE RAIL DATA ASSESSMENT

Rail:Factory and ATrack take as input the trajectory information, point clouds and imagery previously processed with the Pegasus:Manager processing modules to transform Leica Pegasus mobile mapping data into actionable information.

All extracted features and information are delivered from unattended batch processing routines into industry standard formats that can seamlessly be shared among multiple offices and collaborators.

In combination with Leica Pegasus mobile mapping systems and the respective Pegasus:Manager processing and registering tools, Rail:Factory and ATrack complete an end-to-end solution for any rail-related application relying on precision and reliable information that perfectly integrates into existing workflows.



[leica-geosystems.com](http://leica-geosystems.com)



- when it has to be **right**

**Leica**  
Geosystems

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HEXAGON



Mission Planning



Data Acquisition



Processing



Refinement



Feature Extraction

## Mission Planning & Data Acquisition

Leica Geosystems provides for an end-to-end software solution to finish rail survey projects with confidence from field-to-finish. Mission planning and data acquisition guides operators to reliably and efficiently capture complete data supporting constant monitoring of the latest Leica Pegasus mobile mapping systems.

## Processing & Refinement

The Leica Pegasus:Manager processing tools automate processing data that is captured with a Pegasus mobile mapping system into perfectly adjusted and geo-referenced trajectories, RGB-colourised point clouds and imagery.

- Trajectory computation, refinement and adjustment (relative cloud-to-cloud, absolute reference control, SLAM ) with automatic target recognition and thorough quality control
- Coordinate system management
- Batch-anonymization of imagery, blurring entire vehicles and people
- Automatic point cloud classification
- Complex measurement tools for e.g. plane-to-point distances, areas and volumes incl. comprehensive report generation.
- Measurements from point clouds or from seamless colour-balanced 360° panoramas combined with higher-resolution side-camera images

## Feature Extraction - ATrack

Leveraging the rail tracks extracted with Rail:Factory, ATrack is providing semi-automated tools to efficiently divide tracks into their respective geometric elements - horizontally and vertically.

- Automatic optimisation of track geometry
- Semi automatic refinements of start and end position of geometry elements
- Horizontal radius evaluation and vertical gradient evaluation
- Segmentation into curves, transition curves and straight elements
- Reporting with associated parameters like radius, length, tangent direction, kilometre station / chainage
- Exports into detailed geometry plots and XLS reports.

## Feature Extraction - Rail:Factory

Rail:Factory provides for a complete toolset for automatic unattended batch extraction of rail-related information and objects.

- Automatic and interactive extraction of rail-related GIS infrastructure objects such as
  - Platforms
  - Main track and side-track
  - Catenary and wires
  - Poles and signals
  - Gauge and track design elements
  - Cant
  - Super elevation
- Analysis and reporting with customizable meta information and localised units
- Synchronised interactive navigation and measurements in imagery and point clouds rendered e.g. by density, RGB, classification, time, height, quality, intensity
- Full support of regional chainage system and regional rail-head database
- Ballast volume assessment, DTM of trackbed
- Longitudinal and transversal centre-line-based section profiles and union profiles
- Tunnel deformation analysis
- Exports into AutoCAD and ESRI SHP
- Meet-pass collision risk analysis
- Clearance analysis for 2D train profiles and 3D train models against encroachments and vegetation and related detailed chainage-based reporting into XLS, CAD, PDF formats
- Definition of complex heavy load trains (load and carrier) for dimensional bolstered load clearance risk analysis against encroachment database
- Deliver plots and reports for the most common CAD/GIS packages, XLS and PDF

All information available in the images and point clouds - RGB, intensity, classification results, morphology etc. - is leveraged by the rail assessment tools of Rail:Factory and ATrack to turn the captured data into actionable information.

All software is designed to support local languages - ask your local representative for more information.

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