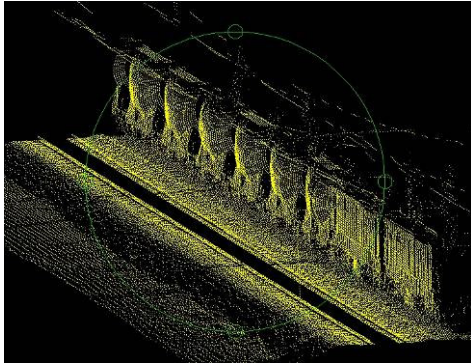


Clearance and Rail encroachment detection surveys



Above: A point cloud export of the laser data from the AIMS system into a standard CAD program.

Below Right: A sample encroachment profile with gauge overlay.

The GT **AIMS Laser** system comprises of a pair of eye safe lasers which are mounted on any vehicle. These lasers continuously scan the rail corridor of distances between 25ft to 250ft as the vehicle moves along the track. Accurate vehicle position, track geometry and vehicle based stereo digital imagery are all recorded as part of the integrated AIMS system along with the laser measurements.

At the completion of a survey the track geometry is derived, producing a smooth geometric centreline comprised of curve, transition and straight information.

The AIMS Laser features include:

- > User defined Rolling Stock Shape and size,
- > Creation of objects to place in the rail corridor.

Generate Clearance Reports between:

- > Different rolling stock types,
- > Rolling stock and rail infrastructure, i.e. platforms, tunnels, bridges etc,
- > Height and Stagger of Overhead wire.

Perform encroachment detection based on:

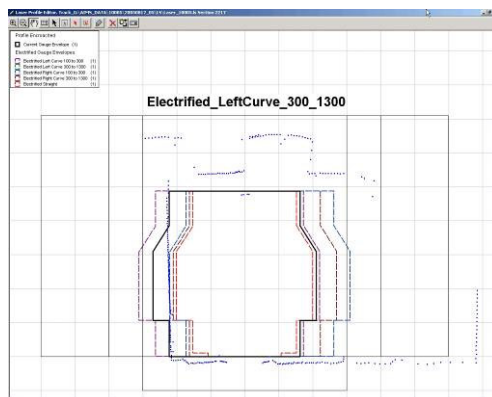
- > User defined Gauge Envelopes,
- > User defined Rolling stock.

All Reports and laser data can be referenced back to a common map base for easy identification of problem areas.

Information can be exported in a variety of formats including, CAD, GIS and Spreadsheet based, i.e. Excel, DBF.

Once the data has been collected, it can be analyzed again and again on multiple projects including:

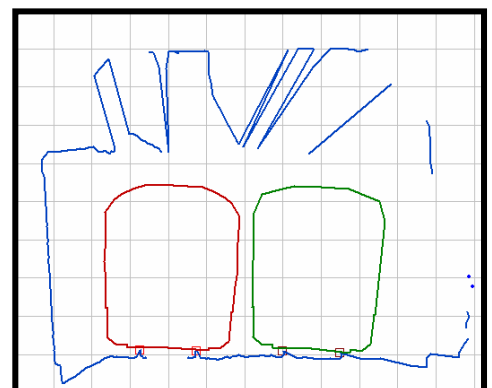
- > Review of corridor prior to and after construction work,
- > Test New Rolling Stock Configurations through tunnels and bridges, etc.
- > Analyze track for single to double conversions.



The laser data is then segmented into user defined profiles and attached to the centreline in their precise spatial location. The system is now ready to perform any type of encroachment or clearance test that the operator wishes to perform. The spatially referenced imagery recorded during the survey is used to verify and validate the laser information, and can be overlaid on the imagery to provide better visualization.

The laser data can also be exported out of the system, to provide a 3D point cloud of the rail corridor for import into any CAD system.

Right: Different rolling stock profiles are being analyzed against each other and their environment.



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