Laser Scanning for Rail Corridors

PDM's mobile scanning system is one of the most versatile LiDAR systems on the market today for the delivery of high density point clouds and colour geo-referenced imagery.

Front Mounted Scanning System

PDM's commitment to advancements in technology in the field of mobile LiDAR scanning has resulted in process' that allow rail corridors and associated infrastructure to be captured digitally with a high degree of accuracy and detail.

Rail Corridor Scanning

Built specifically to address client requirements for speed, accuracy and safety, the PDM Mobile Scanning System is perfectly suited for rail corridor scanning. Able to be deployed on any mobile platform, the systems array of lasers collects thousands of points per second, measuring anything in line of sight within a 100m radius of the vehicle to create a survey-accurate point cloud. 360° image data is simultaneously captured by an array of cameras, producing comprehensive high accuracy data of any rail corridor.

The PDM Mobile Scanning System provides unmatched levels of accuracy by allowing the track centreline to be measured directly from the scan image. All other items can then be referenced in the scan relative to the track centreline. Any point can be assigned a chainage and horizontal and vertical offset along the track with respect to the plane passing through the two rail heads.

Point Clouds

Increased Safety

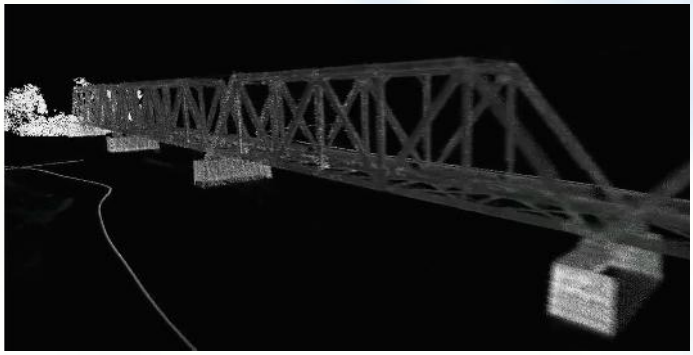
In addition to being an extremely powerful measuring tool, mobile laser scanning offers significantly increased levels of safety for operators when compared to conventional surveying. Scanning operators work safely within the cab of the vehicle, removing the need for to be on the rail corridor which normally would require appropriate management.

Applications of LiDAR Scan Data

Clearance Detection | Rail Geometry Comparison

Asset Pickup/Management | Ballast Profile Determination

As Built Modelling | GIS/Mapping | Condition Audits



Bridges & Infrastructure

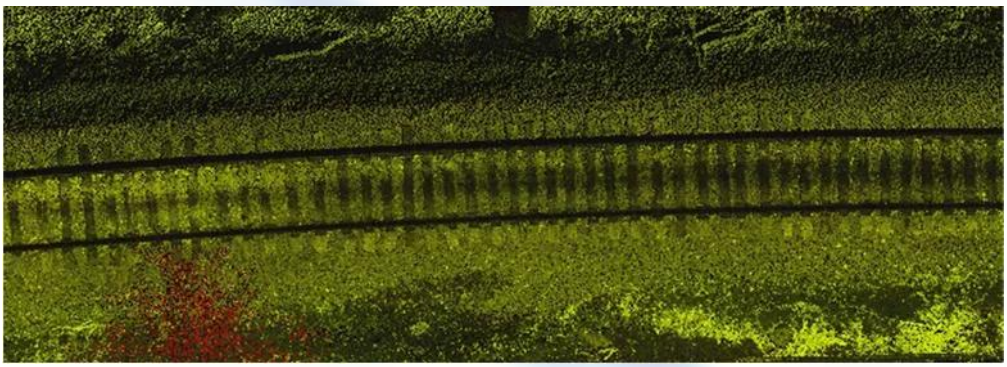
The field of utilizing LiDAR scan data is constantly evolving, with new applications being realized as the full potential of reality capture is unlocked across a variety of fields—and the PDM Scanning team keeps up to date with these new trends and technologies.

PDM's Mobile Scanning System has been utilised on a range of projects across many different environments. PDM has proven to be able to deliver its clients a high quality product effectively, efficiently and safely.

(07) 4772 0402 pdm@pdmanagers.com.au

www.pdmanagers.com.au

Point Clouds



Scanning System Technical Details

PDM's Mobile Scanning System collects and post processes features into a high order georeferenced 3D point cloud. The system is comprised of 6 essential components.; a Faro Focus 3D scanner, a Velodyne 32 scanner, GPS Receiver, an Inertial Management Unit (IMU), 7 POD HD Video Cameras and System software. The absolute accuracy of GNSS positioning and the stability of the IMU's gyro and accelerometer measurements are tightly coupled to provide an exceptional 3D navigation solution that is stable and continuously available, even through periods when satellite signals are blocked from vegetation and or structures. The PDM mobile scanning system includes two LiDAR scanning heads:

- The Velodyne 32 is excellent for mapping/asset collection applications due to its wide angle field of view.
- The FARO Focus 3D scanner is a highly accurate survey/engineer quality scanner ideal for road/ground surfaces.

Both scanners are oriented to cover roadside features with a radius up to 100m. High Definition digital cameras provide 360 degree coloured video and still imagery at either fixed distance intervals or video formats. Coloured imagery is GPS time and date stamped and with further post processing can be located to a high order mm x, y, and z accuracy. This data can then be exported to an ever growing number of industry standard GIS and CAD formats.

Front Mounted Scanning System

PDM's Mobile Scanning System is just that, a safe, fast, and flexible system that provides highly accurate 3D point cloud data and coloured imagery for a wide variety of applications.

In addition to a versatile scanning system, PDM's scanning team has a strong background in engineering and modelling. This gives PDM the edge in delivering a product suitable for it's intended task, as there is first hand knowledge in how the data can be utilized in new and existing workflows.

Contact Us

Please contact us if you would like to learn more about PDM's Mobile Scanning System and the output that can be created to suit your needs.

(07) 4772 0402

(07) 4724 2603

pdm@pdmanagers.com.au

www.pdmanagers.com.au

Head Office:

Level 1
134 Charters Towers Rd
Townsville, QLD 4812
Australia

Mailing Address:

PO Box 300
Deeragun, QLD 4818

Asset Pick-up and Management