severn partnership

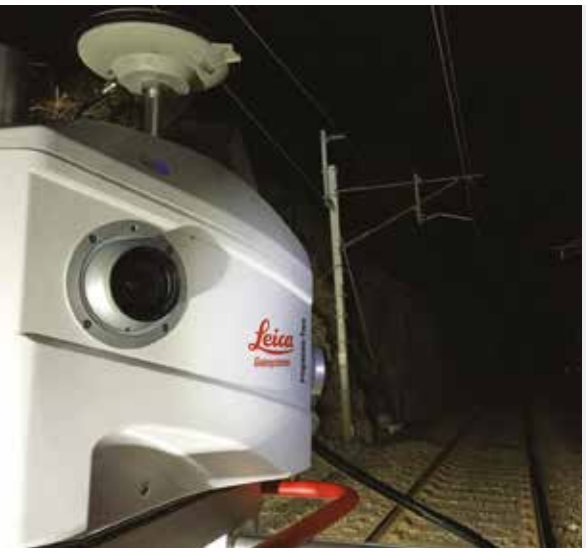
Case Study – Rail Survey

Mobile Mapping

Mobile Mapping Technology allows the collection of 3D geospatial data from a moving vehicle platform. Satellite positioning is supported with an Inertial Measurement Unit generating a smoothed Vehicle Trajectory, to which a 3D Laser Scan Point Cloud and Calibrated Imagery are referenced.

With access to the UK rail infrastructure becoming increasingly restricted to 'Safeguarded' working methods, productive time on site is critical. Mobile Mapping offers huge gains in productivity if deployed correctly. Severn Partnership has liaised closely with Network Rail to ensure all hardware and methodologies used in the deployment of Pegasus:Two comply with current UK standards.

Completing Mobile Mapping in a rail environment requires detailed 'Track Access' Management and 'Possession Planning' with experienced surveyors on site to execute the mission. Severn Partnership has over 25 years experience in the UK rail industry and understands what it takes to deliver high quality projects professionally and on time.



Project Overview

In January 2016, Severn Partnership were instructed to undertake a 3D Laser Scan of a remote rock cutting on the West Coast Mainline near Shap Summit. The deliverable was a 3D Laser Scan Point Cloud for Geotechnical Analysis, therefore point density and minimum shadowing were of critical importance.

By using the Pegasus:Two survey grade Mobile Mapping system, which records data at 1 million points per second from a moving vehicle platform, Severn Partnership completed the survey in a single night time possession without interrupting other maintenance works in the area.

An added benefit of using a mobile system meant the remote site was accessed quickly despite being over 1 mile from the nearest access point.

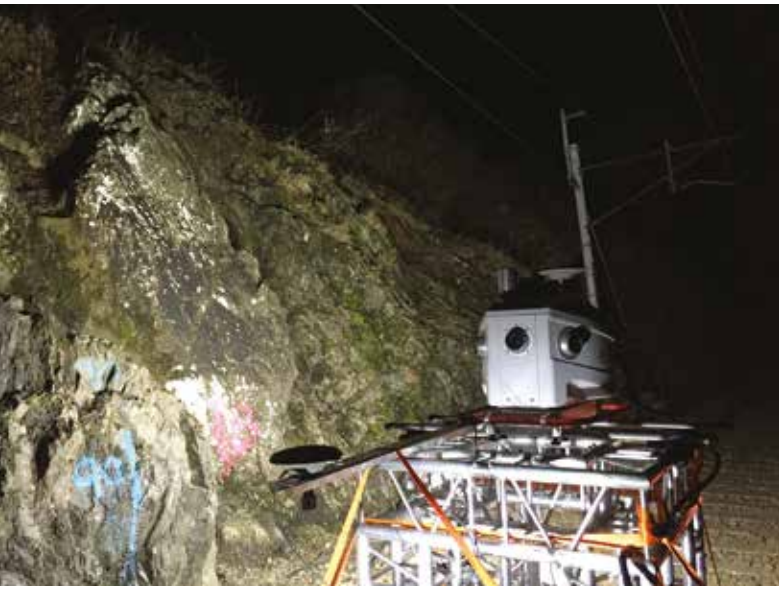
Benefits

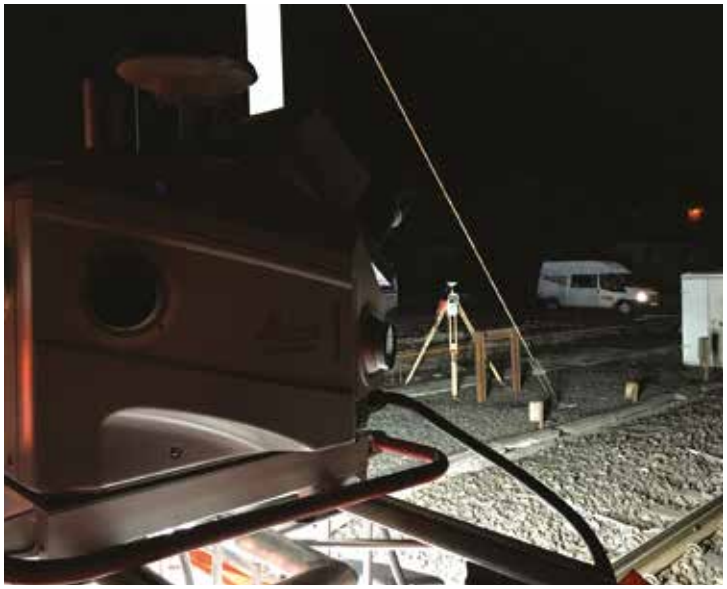
Efficient data collection reduced site access time to within 1 shift - 50% reduction in site time meant fewer staff visits to site and less Track Access Planning.

Scanning from a moving platform significantly reduces shadows and increases point cloud density, resulting in a superior dataset.

All detail captured including cess detail, ballast profile, structures and vegetation, allowing for additional deliverables without the need to revisit site.

Survey grade mapping - Sub 20mm global accuracy, delivered to the WCML and Ordnance Survey Grids.





Technical Services

Detailed Risk Assessment and Method Statement (RAMS) input into the Works Package Plan (WPP)

Survey delivered on Ordnance Survey Grid and WCML Snakegridx

- Local GNSS Reference Stations
- On Track Vehicle with POS and Operator
- Provision of PTS and COSS certified Surveyors
- Dense 3D Laser Scan Point Cloud in. LAS format

Quality data measured safely delivered professionally on time

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