

## Project Profile

### Congleton Station – Survey Comparison

ScanTech International Ltd is a relatively new company established for 18 months and specialising in 3D data acquisition. The company comprises 6 personnel dedicated to the capture of 3D data using advanced laser scanning technology, and to the production of as-built documentation and 3D-models.

The business was set up by the two partners to provide a laser scanning service to the power & process and rail industries and over the last 18 months has added heritage, buildings, architecture and highway infrastructure to it's portfolio.



For ScanTech International the development of laser scanning techniques to capture rail alignments and clearances has been a key achievement. New technology is always treated with suspicion and it was vital to demonstrate through a series of trials that the technology could provide topographical and clearance data to the same accuracy as achieved by traditional methods such as Hallade surveys and laser sweeps.

A potential opportunity arose with the world renowned consultant Mott Macdonald to conduct an as-built survey of the recently remodelled Route 12 on the West Coast Modernisation. First they wanted to be convinced that the laser scanning technique could provide the required level of accuracy

ScanTech International agreed to undertake at short notice a survey of Congleton Station which had recently been upgraded and refurbished. The station and associated rails had previously been surveyed by traditional methods using a total station and

prism and ground control had been

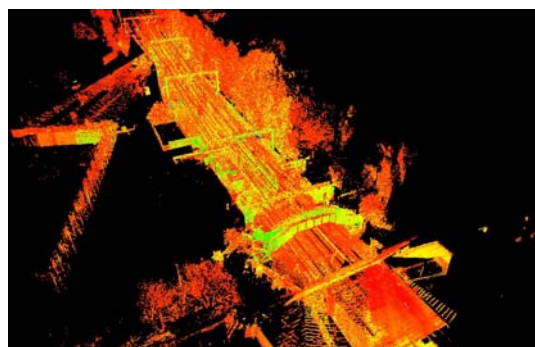
established across the station.

Using the Cyrax 2500 laser scanner ScanTech surveyed the whole station in four hours, despite the pouring rain and produced the alignment strings and cross sections every 10 m. The actual survey was carried out on the platforms in a separated green zone and it was not necessary to venture onto the track at any time. Similarly because the scanner “fires” 1000 points per second, passing trains and people do not affect its ability to capture sufficient information.

Additionally the scanner has captured all the station infrastructure including platforms, furniture, OLE, overbridges and signals.

The results of the two surveys were compared by Mott Macdonald and it was found that they matched to within 5mm in over 70% of the points. The question then arose as to which survey was right for the points that differed or where they both wrong in a different locations.

Mott Macdonald's specialist then looked at the 4ft dimensions throughout the survey and as the track had recently been re-laid on concrete sleepers these should be consistent throughout. The ScanTech International results were consistent to within 2-3mm throughout the 200m length of track whereas the traditional measurements differed significantly.



It was therefore concluded that the ScanTech survey was indeed the more accurate and consequently ScanTech were included on the MM Global Suppliers List.