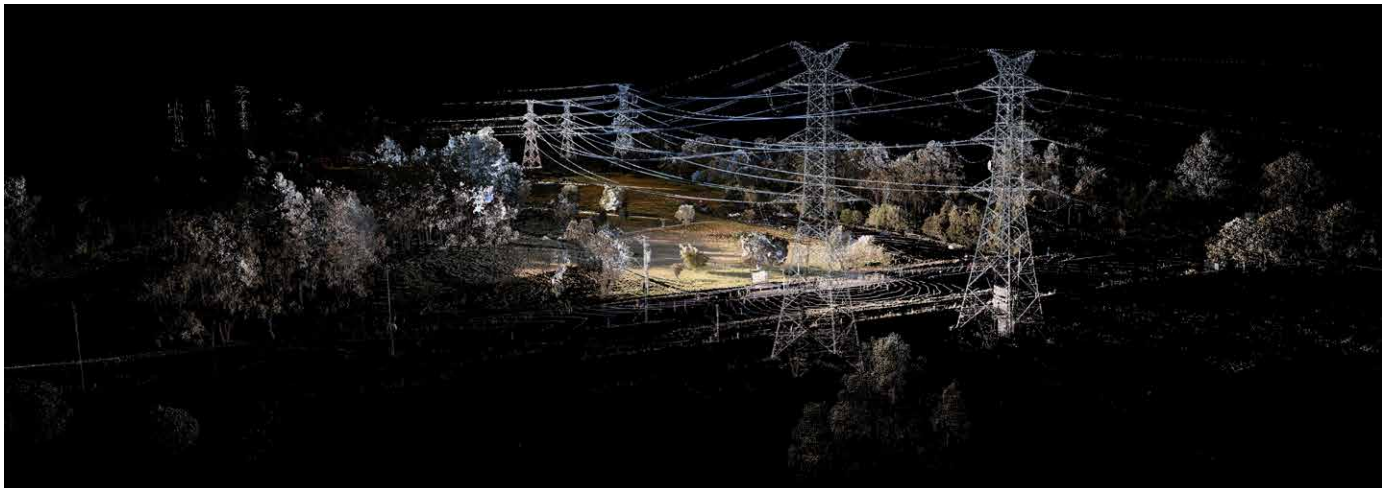


Powerline scanning

The Maptek™ I-Site™ 8800 laser scanner was deployed to locate conductors on powerlines to test the suitability of the method for sag profiling.



The power transmission lines near Carina in Queensland, Australia, are strung between towers over a 300m span, with 24 unique wires to differentiate.

The scanner was set up in several locations to help determine the optimum scanning positions, the attainable range of the conductor from the scanner, and the time required to conduct such a survey. All scans were taken on an arbitrary coordinate system.

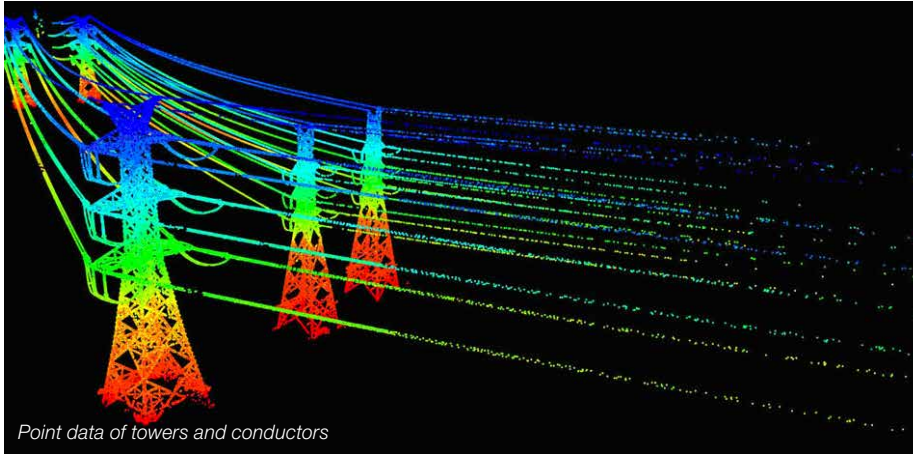
After scanning at different resolutions it was determined that 5-minute scans taken in two locations along the 300m length provided adequate detail to produce lines of best fit along the point data, provided there were no obstructions. A survey of each span would collect enough data for all conductors in view in approximately 10-15 minutes.

Conductors could be projected to a uniform vertical plane for easy comparison against each other or with archival data. Measurements can be taken for ground clearance information, and to identify trees growing under the conductors which could be within a dangerous height range.

- Locating conductors for sag profiling
- Locating infrastructure for as-built data
- Locating surrounding topography, features and buildings for creating annotations, surfaces and contours and measuring clearance and height
- Matching photo data with known geometry

Scanning acquires finer detail (closer point spacing) in less time than traditional survey techniques. The scan data can be used for a range of tasks.





Surrounding data (such as trees, roads, buildings and paths) can be identified and traced or the coordinates used for adding CAD symbols and annotations.

Laser scanning avoids features being missed during a survey, as everything can be located in the scan data. A simple user interface on the scanner controller, trained operators to conduct scans without surveyors on-hand.

The tablet controller provides instant feedback so users can see that the conductors are being captured during the scan process. Traditional survey techniques can be prone to sighting or coding errors when locating many conductors in a single span. This is not an issue with laser scanning.

Laser scanning allows field resources to be allocated more efficiently. Draftspeople can work with the scan data, with the surveyors using their expertise to guide the outcomes.

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