



Rapid Survey Solutions

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Location: Melbourne, Australia

Principals:

- Nick Nolan (left)
- Brad Chambers (right)
- Experienced in construction surveying and management

Specialties:

- Surveying
- GIS
- Civil Construction
- Maintenance
- Infrastructure management

- Considered building a mobile mapping system from components
- Discovered Topcon's IP-S2 – complete solution for mobile mapping
- Purchased first system in Jan. 2010 from Topcon dealer **Position Partners**

Project photos and screen captures provided by Rapid Survey Solutions AU

Conventional Survey vs. IP-S2

RRS evaluated conventional survey methods vs. IP-S2 mobile mapping.

Results of comparison – Roadway Mapping:



Conventional Survey

- 500 meters long X 150 meters wide
- Robotic total station and GPS
- 1&1/4 days – 1,200 points



IP-S2 Survey

- 8 kilometers mapped
- 12 minutes - 30,960,000 points
- 360° spherical images of site

Accuracy

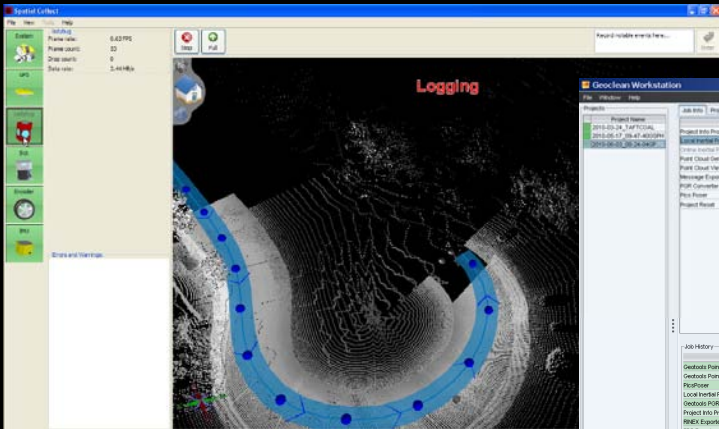
- **RSS** business focus is surveying and construction.
- Their clients demand high accuracy deliverables.

Results of RSS IP-S2 tests:

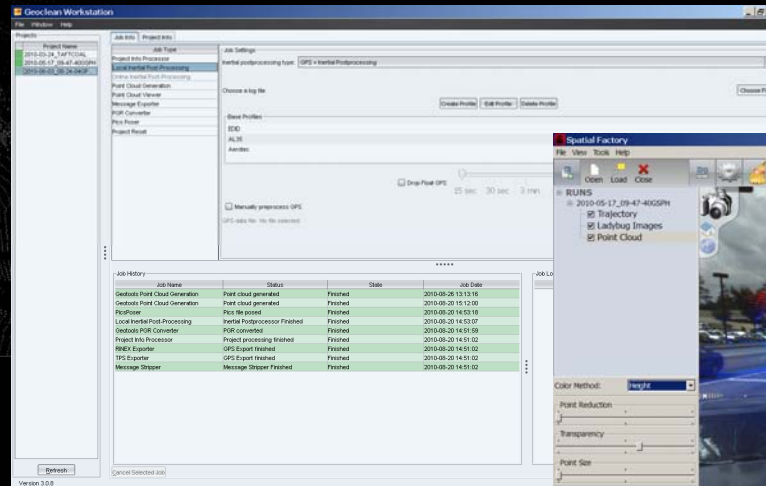
- 30-50 mm (0.09-0.16 ft.) absolute accuracy
- Range up to 50m (164 feet)
- Speeds 50-80 km/h (30-50 mph)



IP-S2 – An Integrated Solution



Spatial Collect
Data Collection Software



Geoclean
Data Processing Software



Spatial Factory
Analysis & Extraction Software

*“Another key element is the **software** that runs the whole system. While you can buy the hardware itself: the scanners, the camera, and other elements, this is only part of the system. The IP-S2 combines all of the hardware and software to produce an integrated solution.”*

-Nick Nolan

IP-S2 Projects – Desalination Plant

Conventional ground survey - 2 weeks
IP-S2 Survey – 4 hours

Project requirements:

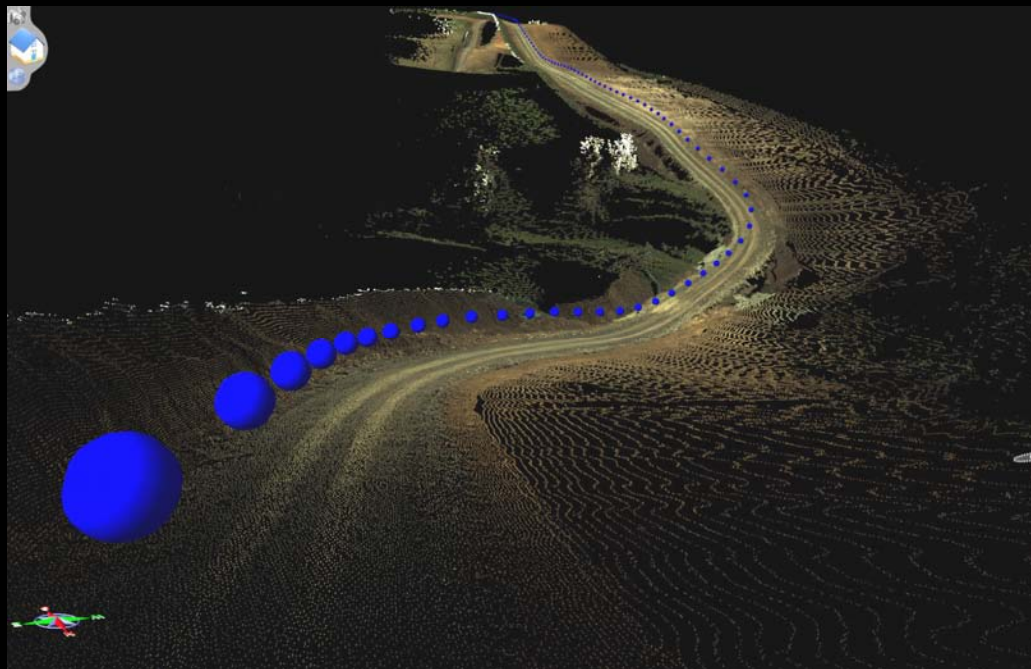
- As-constructed survey of a 4.5 km (2.8 mile) section of pipeline right of way following completion of grading and earthwork
- Steep areas



IP-S2 Projects – Desalination Plant

IP-S2 Survey

- Data collection and processing – 4 hrs.
- Total project time including office work – less than 1 ½ days
- Delivered to client the next day:
 - Accurate survey
 - Detailed photographic record of right of way every 5 meters - forwards, backwards, up and down



IP-S2 Projects – Pipeline Route Survey

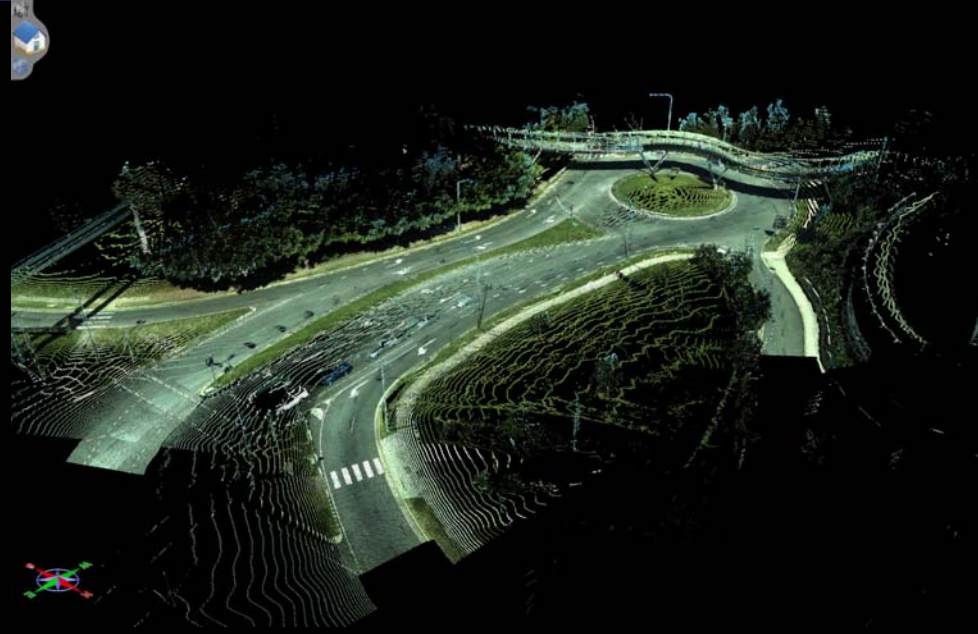
30-40% Cost Reduction over Conventional Survey

Project Requirements

- Full-feature survey of a proposed route for a 450 mm (18") diameter water pipeline
- Location: western suburbs of metropolitan Melbourne.
- Deliverables: DOT-coded CAD drawings and DTM - in a desktop study.



IP-S2 Projects – Pipeline Route Survey



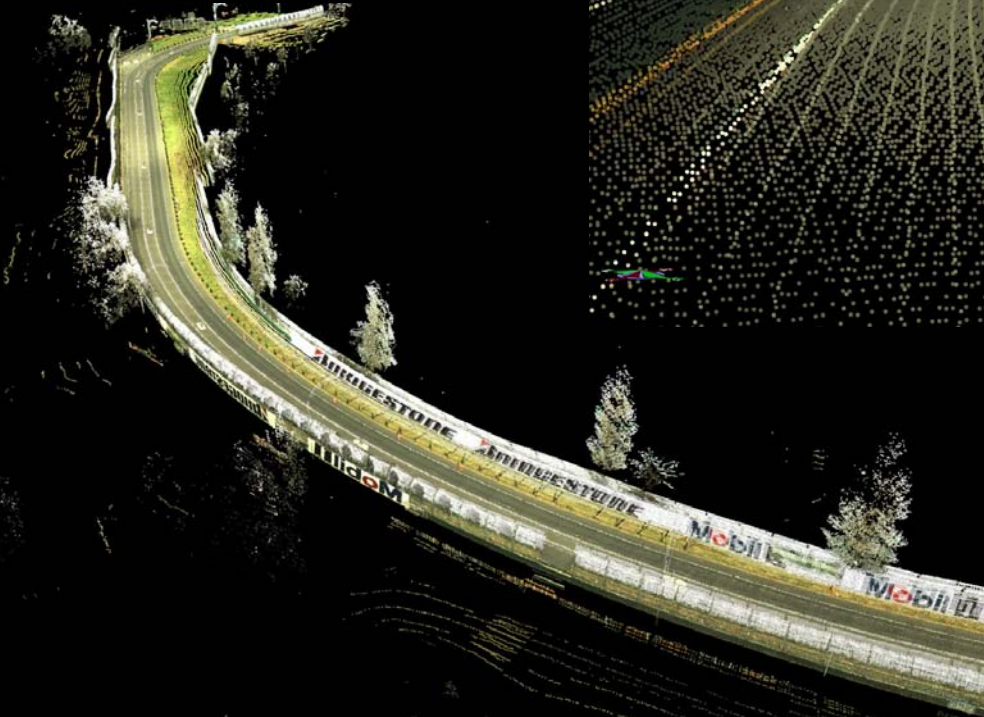
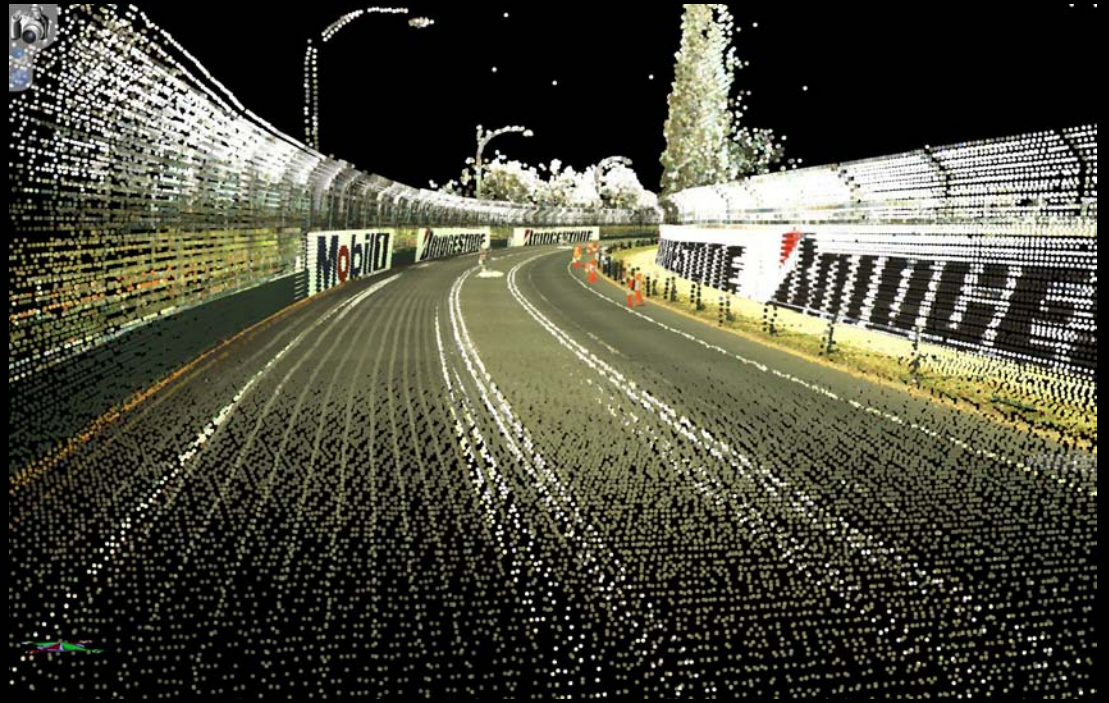
"The end result was as accurate as any conventionally surveyed route and is capable of being used for engineering purposes. In a day's work, we covered around eight km of suburban streets in the Werribee area, followed by a couple of days compiling the results. Again, our costs were about 30 to 40 percent of the traditional field survey costs, plus we turned the project around much faster, and with full photographic records."

-Brad Chambers

IP-S2 Projects – Golf Course



IP-S2 Projects – Grand Prix Track



Applications

RRS foresees these application for the IP-S2:

- ✓ Asset management: utilities and government agencies
- ✓ Asset management: roadways and railways
- ✓ Earthwork and mining: volume calculations
- ✓ Civil Construction: DTM generation, design, progress volumes, machine control applications
- ✓ Clearance surveys for heavy equipment haulage: overhead wires, low bridges
- ✓ Accident investigation

RSS Comments

SAFETY

*"The improvements from a **safety** perspective alone are very significant. No longer do you need surveyors on the ground working alongside busy roadways or around construction traffic. There's no interaction with any traffic whatsoever. That allows us to significantly improve the risk factors for any project we are working on."*

-Nick Nolan

ACCURACY

*"Topcon is also continually developing ways to improve the accuracy of the IP-S2 surveys. For example, we can now apply conventional survey techniques using **control point registration**, and integrate them fully with the LiDAR data we are collecting using the IP-S2. That gives us a better absolute accuracy with our scanning and takes just a few hours to cover routes and areas, compared with more traditional survey methods taking many weeks."*

-Brad Chambers

Position Partners - Australia's IP-S2 Distributor



Dealing with one supplier: *"It gives us a lot better control and more confidence with the service and support that we get through Topcon's Australian Distributor Position Partners."*

-Nick Nolan

For More Information...

Web Resources

Topcon IP-S2 Website:

- View Detailed Product Information
- Download the IP-S2 Product Brochure
- Schedule a demonstration

<http://www.topconpositioning.com/products/mapping-and-gis/mobile-mapping/ip-s2.html>

✓Topcon IP-S2 Case Study Videos

<http://www.topconpositioning.com/ips2/video-frame.html>

✓For more information, send an e-mail to: mobilemapping@topcon.com

✓For more information about RSS, go to: www.rssgroup.com.au

