

AutoMap

Mapping companies and Road Asset Managers struggle to quickly and cost effectively create accurate inventories of road scene objects, such as road signs and poles.

Companies and authorities that own or maintain assets have a need to perform regular surveys to establish the status of their assets. In the case of assets visible from the road, current best practice is to contract dedicated surveying vehicles equipped with cameras and/or 3D laser scanners that capture raw data.

The surveying process generates huge amounts of images, laser measurements and other data that needs to be analysed to extract important information, for example, geolocating all road signs or creating an inventory of all power poles. Today, this is done manually.

NICTA's Solution

- A fast and efficient solution for automatically analysing vast amounts of raw sensory data, significantly reducing the effort needed to create inventories of objects of interest. Current manual processes are much slower, more expensive and error prone.
- A cost efficient and time effective means of producing highly accurate maps of many objects, using LIDAR point cloud and rich image data sources.

Awards Include

- CeBIT.AU Early Innovators Award 2010
- Innovation Award 2009 ACS Canberra ICT Awards

Impact

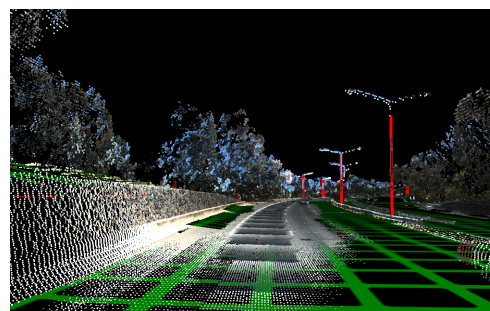
- Enriched images using multispectral sensors
- Improved environment monitoring
- Improved life span analysis for asset management.

Industry Engagement

- 800,000 kilometres of sign data processed in Australia and New Zealand.
- Map data distributed to over 2 million GPS navigation devices.
- **Sensis** – Key Australian Customer. Sign data processed for large portion of Australia and New Zealand. Extensive use of AutoMap data for in-car and online maps.
- **State Road Authorities** – Road assets surveyed for maintenance and compliance.
- **TopCon** – US Survey system manufacturer. Potential key partner for distribution of AutoMap technology. Joint effort on new software business line for AutoMap.



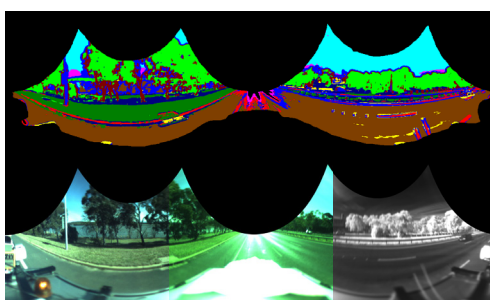
Fast and accurate mapping of road signs for road asset management and GPS navigation units.



Advanced detection algorithms for finding power poles and other objects within rich point cloud data collected using LIDAR.



LIDAR return intensity provides a rich source of information for measuring important properties such as sign reflectivity.



Hyperspectral image analysis to identify and differentiate objects such as trees, grass and road. This will allow for an even more detailed labeling of the world.

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Leading the Way

NICTA is Australia's Information and Communications Technology (ICT) Research Centre of Excellence, driving innovation through high quality research, research training, commercialisation and contract research.

NICTA has the largest concentration of ICT researchers in Australia. Our research focuses on use-inspired basic research that benefits industry, the community and the national interest.

Since NICTA's inception in 2002, NICTA has built strong research capability in:

- Software Systems
- Networks
- Machine Learning
- Computer Vision
- Optimisation.

Our Business Teams are the market focus of our research capabilities:

- Broadband and the Digital Economy
- Infrastructure, Transport and Logistics
- Security and Environment.

NICTA researchers work on Business Team projects supported by:

- An Engineering and Technology Development Team
- IP, Legal and other professional support.

Our work as a world-class research institute and Centre of Excellence in science and innovation brings together many of Australia's and the world's top ICT researchers. NICTA provides them with the facilities and support they require, making imagination to impact a reality.

NICTA's unique approach fosters and develops ICT research. We work closely with both industry and other research institutions to solve problems and make breakthroughs in ICT with real impact. NICTA's focus on use-inspired research means our projects have direct relevance to the challenges faced by business, government and individuals around the world. The result is breakthrough technologies that provide commercial opportunities and have a positive impact on Australia's export earnings.

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