dMap: A Low-Cost Distributed Mapping Concept for Future Road Asset Management

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Sensis and Automap

- Key Australian customer, strong and growing.
- dMap is a part of Automap from NICTA that detects road signs for Sensis and some other companies.

Initiation of dMap

- High costs of dedicated vehicles.
- Low data update rate of the current systems.

dMap

- Current implementations:
  - Detection algorithms in C++
  - Python for UI + DB I/O
  - Postgres + pgAdmin
  - QGIS
  - Drivers in C++
  - ROS for nodes / high inter-interoperability
  - Shape files for GIS tools
  - Text files for nodes caching system.

Road Coverage

Beijing Roads
Trajectories of 24 Taxis in 7 days
Heat Map for 24 taxis in 7 days

Evaluation

\[ TC = I + (TP / DP) * \sum (A + D + O) \]
\[ NewTC = I _N + TC _N = HUR \]

dMap is a part of AutoMap at NICTA’s Infrastructure Transport and Logistics team, which is providing road sign detection service to different organizations and companies in Australia and USA.