

SBAS project – Highly Automated Driving vehicle

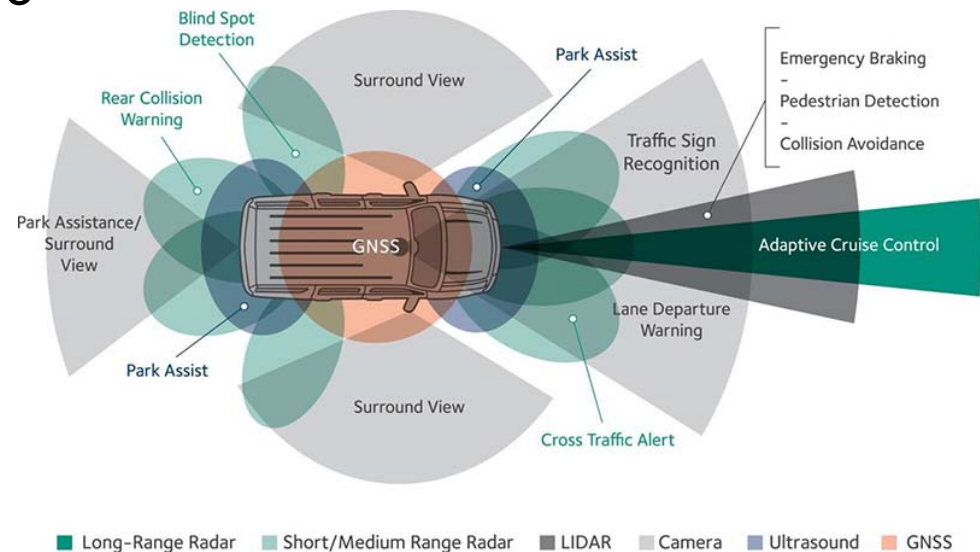
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Director Transport Futures



Why VicRoads is interested

- Societal benefits from emerging vehicles:
 - **Reduced road trauma**
 - Increased mobility
 - Environmental & economic
- Potential barriers to market deployment and to the optimisation of benefits

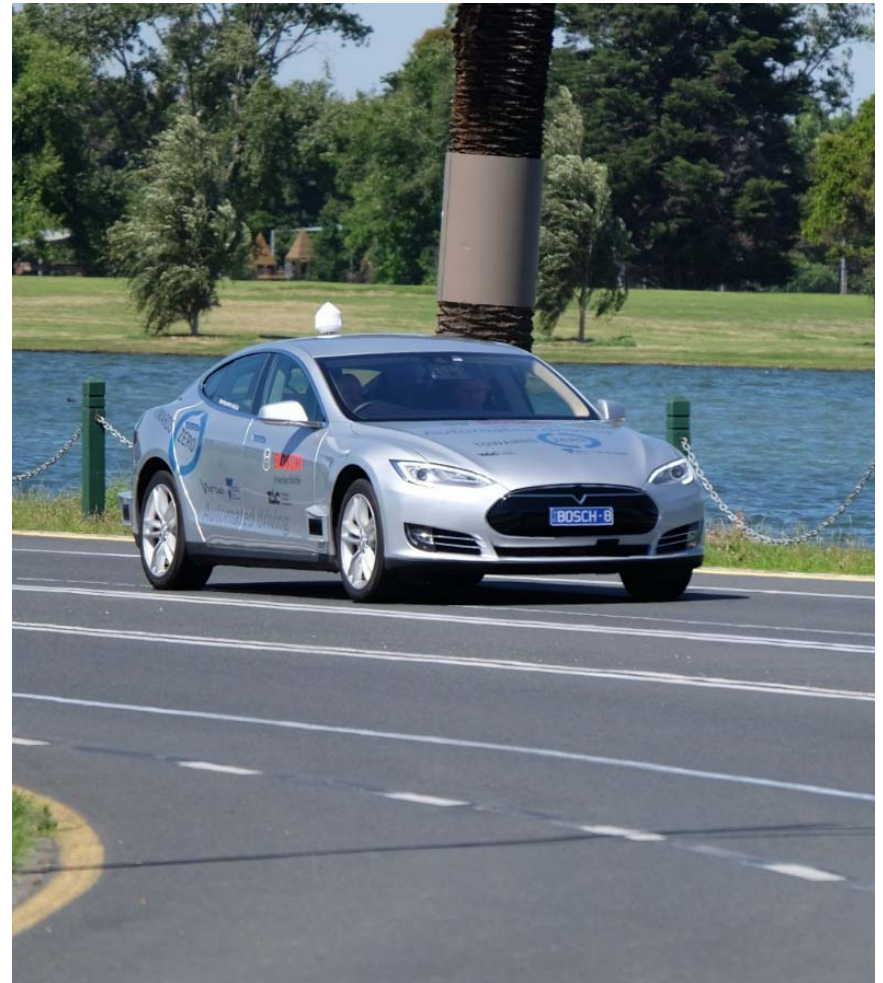


Future positioning requirements

- Future requirements for Connected Vehicles (CV) and Automated Vehicles (AV) are still evolving
- Some emerging CV apps require +/- 1.0m with 95% confidence, but timing of market deployment not known
- AV requirements appear to differ between vehicle systems, and between use cases
- OEM feedback suggests primary reliance on 'relative' positioning, but 'absolute' positioning still important

Bosch-TAC HAD vehicle

- Developed by Bosch Australia
- Funded by Transport Accident Commission (TAC), with VicRoads as a partner
- Capable of SAE Level 3 'conditional' automated driving
 - 6 lidar sensors
 - 6 radar sensors
 - 1 stereo video camera
 - High precision GNSS with RTK *Genesys ADMA-G using SmartNet CORS RTK*



Project objectives

- Compare the SBAS testbed services with the positioning service currently used by the Bosch-TAC HAD vehicle
- Determine whether the SBAS test services are capable of meeting the vehicle's GNSS positioning requirements
- Contribute to SBAS economic benefits analysis – with a particular focus on road trauma reductions

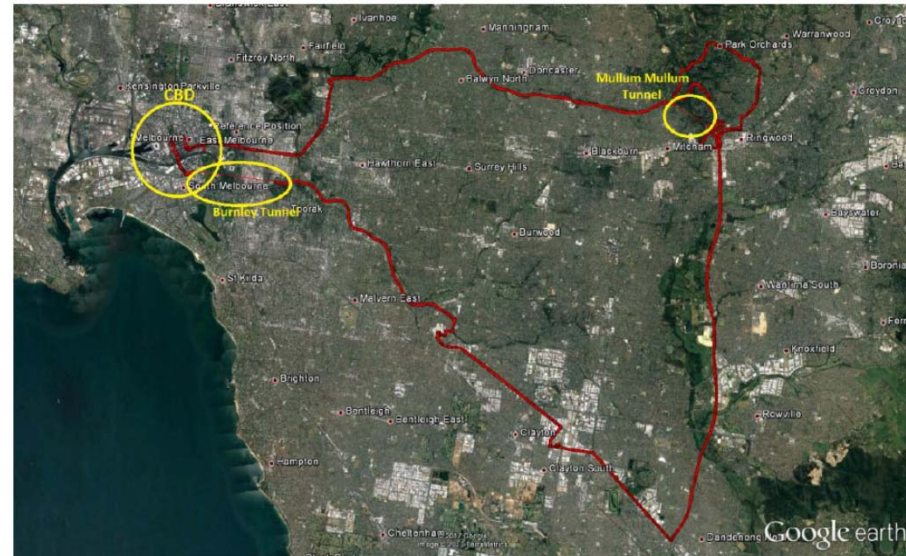
Project scope

Test performance in a range of scenarios:

- Open freeway with overpasses
- Under high voltage power lines
- Tree cover
- Tunnels
- Tram overhead wires
- Urban canyons
- Rural areas without cellular coverage

SBAS services to be tested:

- L1 Legacy SBAS
- DFMC SBAS
- PPP over L5



Urban route

Project status

- Testing is under way
- Initial tests with tablet-based hardware conducted in December 2017
- Further testing planned in March 2018 using handheld magicUT devices
- RMIT analysis in progress
- Final report anticipated mid year 2018

Project partners

Collaboration between:

- VicRoads
- RMIT University
- Bosch Australia
- Transport Accident Commission (TAC)



L-R: Hon Craig Laundy MP, Graeme Kernich (CRCSI), Robyn Seymour (VicRoads), Andy Barnicoat (Geoscience Australia), Mark Jackman (Bosch)



Thank you

