

ADVISORY INTELLIGENT SPEED ADAPTATION TECHNOLOGY IN WESTERN AUSTRALIA

KEY LINES:

- Intelligent Speed Adaptation (ISA) systems have been field-tested in a number of countries, including Australia. These in-vehicle systems are able to detect when a vehicle is exceeding the speed limit on a particular road, and warn the driver or even limit the vehicle's speed. There is evidence that ISA systems with good user acceptability can provide significant safety benefits.
- The Government is demonstrating the utility of ISA systems as a driver assist tool, with key opinion leaders in political, road safety, health, industry and media circles trialling the technology within their vehicles from March 2008 onwards.
- The focus of the trial is on advisory ISA.

BACKGROUND:

Moderation of the travel speeds chosen by drivers and riders is critical in establishing a safer road system. Speed reduction has a dual impact on road trauma because travel speeds influence the number of crashes that occur as well as the severity of crashes. The number of crashes that occur reduces at lower speeds because road users have more time for decision making, are less likely to lose control, and can stop in a shorter distance. Additionally, lower speeds result in reduced injury severity in crashes that do occur due to the lower levels of crash impact energy involved. ISA technology has the potential to reduce the prevalence of speeding within the community.

CURRENT POSITION:

In support of the State Road Safety Strategy, the Office of Road Safety and Main Roads WA are conducting a trial of advisory ISA systems using GPS and other potential technology in WA. The objective of the trial is to test user acceptance of the system with the aim of creating demand within the general community for ISA as a tool that will support them in choosing speeds that are at or below the prevailing speed limit. The greatest road safety benefits for the community will come from small reductions in speed by the large number of drivers who speed by smaller amounts. Promotion of the ISA trial will highlight the community benefits of this driver support technology. While it is not the focus of the WA trial, the ISA technology can be further developed to provide speed monitoring and speed controlling capability and may be of interest to insurance companies, employers and parents.

The ISA pilot project involves the development and demonstration of a low cost compact advisory ISA unit that can be fitted to most modern vehicles and is marketable to the public. Around 50 units have been purchased and installed in various fleets for an evaluation of driver's attitudes to and experiences with the technology.

Each ISA unit involves a small “black box” fitted within the dash or placed in the glovebox that contains the GPS receiver and the computer software that matches the vehicle’s current location and speed limit for that road with the current speed of the vehicle. A display unit, alerts the driver, via a system of audible and visual signals, that they are exceeding the speed limit applicable to the road.

The WA ISA trial has required the development of a Statewide electronic speed limit map database by Main Roads WA, as well as consideration of the associated technologies for updating speed information on installed ISA units. Main Roads WA are leading the way nationally in this work and there is considerable interest in WA’s approach to the mapping and wireless updating of speed limit information to the trial vehicles.

The partnership that Victoria and WA have entered into with the Victorian company Australian Control Systems (Speedshield) for the demonstration trial has given Main Roads WA valuable knowledge and experience in providing speed limit data to external providers of ISA technology and, when the trial is fully underway, will allow them to address critical issues such as data security, reliability and accuracy.

The current status of the ISA demonstration project is as follows:

- In December 2007, around 45 key opinion leaders and stakeholders across Perth and regional WA were invited to participate in the trial.
- Installations of advisory ISA units in the volunteer vehicles commenced in the first week of March 2008, with around 35 vehicles fitted to date.
- All bar one of the vehicles fitted to date are metropolitan-based, although a number do regular country trips.
- Volunteers are expected to trial the ISA units for around 6 months, during which their experiences and feedback on the usefulness and convenience of the devices will be surveyed.
- Exit surveys have been sent to the first 25 participants, with around half returned to date. Initial feedback has shown that the biggest problem has been with the personal digital assistant (PDA) display unit itself (sequence of starting). Some reported errors in the map database have also been reported.
- The next step of the project is to trial the technology that will transmit digital speed limit information updates to three beacons located in the Perth metropolitan area. ISA-equipped vehicles travelling within a theoretical 5 km radius of these beacons will automatically receive the map updates. It is expected that the beacons, which use the 900 MHz band, will be installed before June 2009.
- A communications plan promoting the benefits of ISA to both government fleet managers and the general community will be finalised by mid 2009.

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