



POST-EVENT SUMMARY OF SYMPOSIA AND WORKSHOPS AT ARSC2016

(As at 16 September 2016)

Thursday 8 September: 11:30am – 1:00pm

Room: Bradman

Symposium

**Autonomous, semi-autonomous and existing vehicles.
What will be the impact on road safety results and when?**

Key Organiser:

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Overview:

The automation of vehicles is well-underway, with many new vehicles including various technologies to assist drivers or override controls when an accident or loss of traction is detected...The technology can enable drivers to use their time more productively, prevent accidents, save fuel, reduce emissions, raise average speeds and expand the capacity of roads and parking facilities through assisted driving and self-parking. The National Infrastructure Plan fails to outline any specific actions, any quantifiable benefits, or any timetable for the “prevention of accidents” by the introduction of the automation of vehicles. The Plan does state; “that increasingly complex vehicle and data collection systems increase barriers for consumers to fully understand the benefits and costs of adopting new technologies. Governments should ensure developments provide benefits for all road users, and mandate manufacturers provide objective information on vehicle technologies and their use of consumer-generated data.” The Symposium will discuss these issues to encourage commitment to the introduction of automation actions to obtain tangible reduction in road crash trauma.

Summary/Outcome:

There was strong agreement that it would be valuable to talk about automated technology and automation rather than ‘driverless’. The technology available now and in the near future will assist the driver rather than replace the driver.

The Chairman of the US National Transport Safety Board had recently stated that his agency's experience in investigating accidents in autopilot systems in planes and trains suggests that humans can't be fully removed from control. Future cars will be much safer, but they will still need humans as co-pilots. Handling some human engagement in a largely automated system will be the challenge.

Dealing with the unpredictable will be difficult.

We may well see special lanes for driverless vehicles within 5 years, less restrictive driving environments in 10 and perhaps 75% of vehicles autonomous by 2035.

Automakers are keen to reach the situation where autonomous vehicle technology can operate safely and reliably without any driver inputs. This is likely to be some time off and we are most likely facing a longer period than expected where "we" drive - sometimes the car drivers and some times the person drives.

How will people use these technologies, and what will the impact on behavior and risk be? Further, what are the strategies that can be used to manage behavior and risks during this prolonged "we" phase, likely 20+ years? We may not ever remove the driver completely. This necessitates a clear understanding of both what is happening outside the car with what is happening inside the car - meaning both outward and inward facing monitoring will be needed.

Much of the development has been going on for over a decade with many driver assist technologies already in the market and while meeting regulatory requirements, have been rarely comparatively rated for their performance. In addition, as one supplier noted, market acceptance of specific collision avoidance technologies, such predictive emergency braking, are not sold easily.

The Subaru Eyesight technology (providing a "second pair of eyes" for the driver to assist in a range of collision avoidance systems) has been very effective in already reducing crashes. A study in Japan of a large fleet; 246,139 equipped with Eyesight, 48,085 not equipped, reported only 1,493 collisions over 4 years for the Eyesight cars, but 741 for the non equipped. This was an overall crash rate reduction of 61%; which was a reduction of 49% for vehicle to pedestrian crashes, 62% vehicle to vehicle crashes and 84% for rear end crashes. These results show the need to promote such semi-autonomous technologies into all new cars and perhaps the after market now.

However to progress further we will need;

- A national consistent approach to communication (same work protocol).
- Manufacturers and non-government agencies must manage the disruption due to policy and regulatory changes.
- Government should take up the policy leadership (not the product driven policy) and development in infrastructure.
- More investment from Government and private sector will be needed to fast-track road and vehicle reform.
- Confidence in the technology is a key point and we all have different parts to play.
 - Consumers need confidence the technology works and is independently tested and assessed,

- The automotive and technology industries need the confidence the technology won't breach any regulatory issues and;
- Politicians and decision-makers need the confidence to amend or remove regulation where needed without limiting innovation.

The community will need to deal with the immediate automation issues before jumping too far ahead.

There appear to be no reliable predictions for the value of fully autonomous vehicles in terms of actual reductions in crashes and there is doubt over whether full autonomy will occur. However large reductions in crash rates from driver assist technologies have been demonstrated now.

Early introduction of these, will also assist in gaining acceptance of further automation.