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Melbourne Convention and Exhibition Centre

10–14 October 2016



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# Andrew Dankers

**SIS46 – Certification of automated road vehicles,  
challenges ahead**



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# Outline

Background - Australian vehicle standards

ADR development challenges

Current international challenges

Remaining challenges



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# Australian vehicle standards

The Commonwealth's Motor Vehicle Standards Act 1989 (MVSA) requires new road vehicles to comply with **Australian Design Rules (ADRs)**, before being offered to market for use in transport.

## ADRs

- Apply under Commonwealth legislation at first supply.
- Cover safety, emissions and anti-theft protection.
- Protect Australian public against significant road trauma risk and expense. Enhance public confidence.
- Are mostly performance based rather than design restrictive (to allow for innovation).
- Apply to AVs as they do to any supplied vehicle.
- May set performance requirements for effective automated systems (e.g., AEB).

Like all vehicle trials, exemptions for AV trials can be sought.



Crashworthiness standards



Requirements for driver controls & aids (for manual maneuvering)



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# ADR development challenges

## Effective regulation development

- Regulation Impact Statements (RIS) require known sales, trauma and effectiveness data.
- Regulations should not bear upon existing authority (e.g., jurisdictional road rules or ACMA authority).
- Regulation protects the public against established risk. It is complemented by non-regulatory schema: ANCAP, industry codes, consumer awareness.

## Resources

- **VSS**  
~ 60 staff  
~ US\$9M pa
- **NHTSA**  
~ 600 staff  
~ US\$900M pa

## Harmonisation

Australia is an active participant at the *UN World Forum for Harmonization of Vehicle Regulations* (WP.29), the peak international forum for the development and harmonisation of vehicle standards.

- Over 90% of vehicles supplied to Australia are imported.
- Australian sales represent 1% of world production.
- Regulation based on international standards provides access to the safest vehicles from the global market at the lowest cost.
- Australia should not create barriers to the trade of safe, productive equipment.



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# Current international challenges

## WP.29 ITS/AD – AV activity

### eSecurity



Secure communication

### eSafety



Redundancy & safe failure

### EDR



Data protection, electronic data recorders

### HMI



Safe human-machine interfaces for occupants and road users

## Automatically Controlled Steering Function (UN Regulation No. 79)

- Limits automated steering control to 10kph.
- Amendments will alleviate continuous steering “misuse”. Vehicles exhibiting continuous steering control will not be granted approvals to Regulation No.79 until a future series.
- Australia has not (yet) adopted UN Regulation No. 79.



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# Remaining challenges

## Until ~2025 (conditional/monitored automation)

- HMI and safe transfer of control.
- Over-the-air (OTA) updates – may add automated features or change level of automation. 
- Australia is not as explicit as Japan, Korea & Europe in requiring human driver to retain control.
- Confusion over automated system capability:

*Marketing of level 3 systems may imply emerging AVs are autonomous, when they are not. Though they may function without driver supervision (at times), the driver remains responsible [under Korean law]. This is because current systems are generally reactive and cannot replace a driver for high level decision making and supervision.*

[Korea, APEC TPTWG-43, 2016]

*Manufacturers would be prohibited from marketing lower levels of automation (e.g., Tesla autopilot), as 'autonomous', 'self-driving' or 'auto-pilot'.*

[California, Draft regulations for automated vehicles v2, 2016]

## Beyond ~2025 (high/full automation)

- WP.29 - currently *out of scope*.
- In Australia - systems could already steer and make high level driving decisions (within jurisdictional road rules).

Early (or late) regulation could place Australia out of step with global development



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# Thank you

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