

Shaping Future Transport

A national in-service safety law for automated vehicles



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Intelligent Transport Systems

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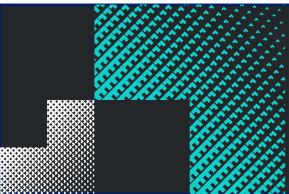


 A national in-service safety law for
automated vehicles

 ITS Australia, 12 November 2020



The NTC is a national land transport reform agency that supports Australian governments to improve safety, productivity and environmental outcomes, provide for future technologies and improve regulatory efficiency.

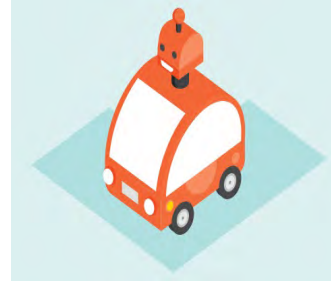


Our reform objectives



Safety

Promote the safe movement of people, freight and services.



Future Technologies

Remove barriers to innovation and enable the safe use of new and emerging technologies



Productivity

Promote competitive national and international supply chains while reducing the regulatory burden, to make Australia's land transport system more productive and efficient

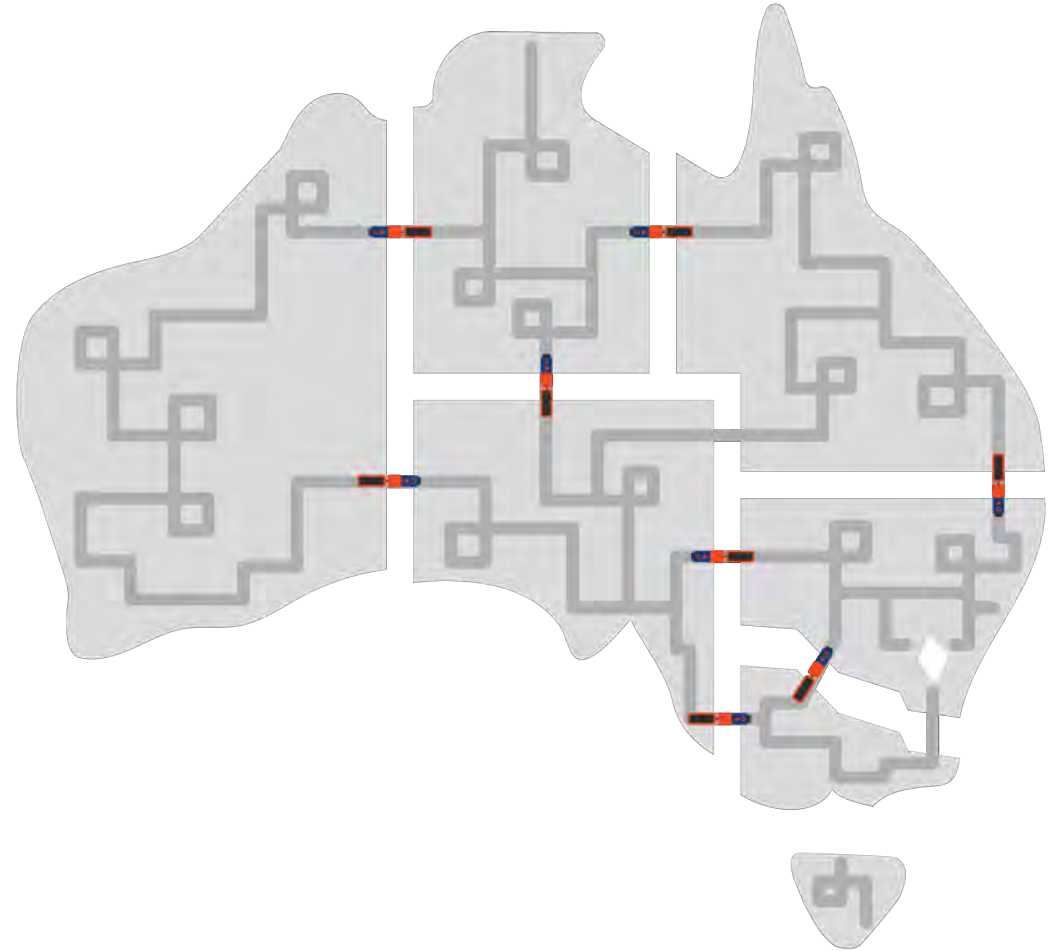


Sustainability

Facilitate a sustainable transport system to better promote better environmental outcomes.

Automated vehicle reforms - our goal

End-to-end regulation to support the safe, commercial deployment and operation of automated vehicles at all levels of automation



NTC automated vehicle work program

5 key questions

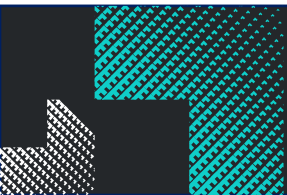
1. Who is in control of an automated vehicle?

2. How do we ensure automated vehicles are safe *when they first enter the market?*

3. How do we ensure automated vehicles operate safely *throughout their life on the road?*

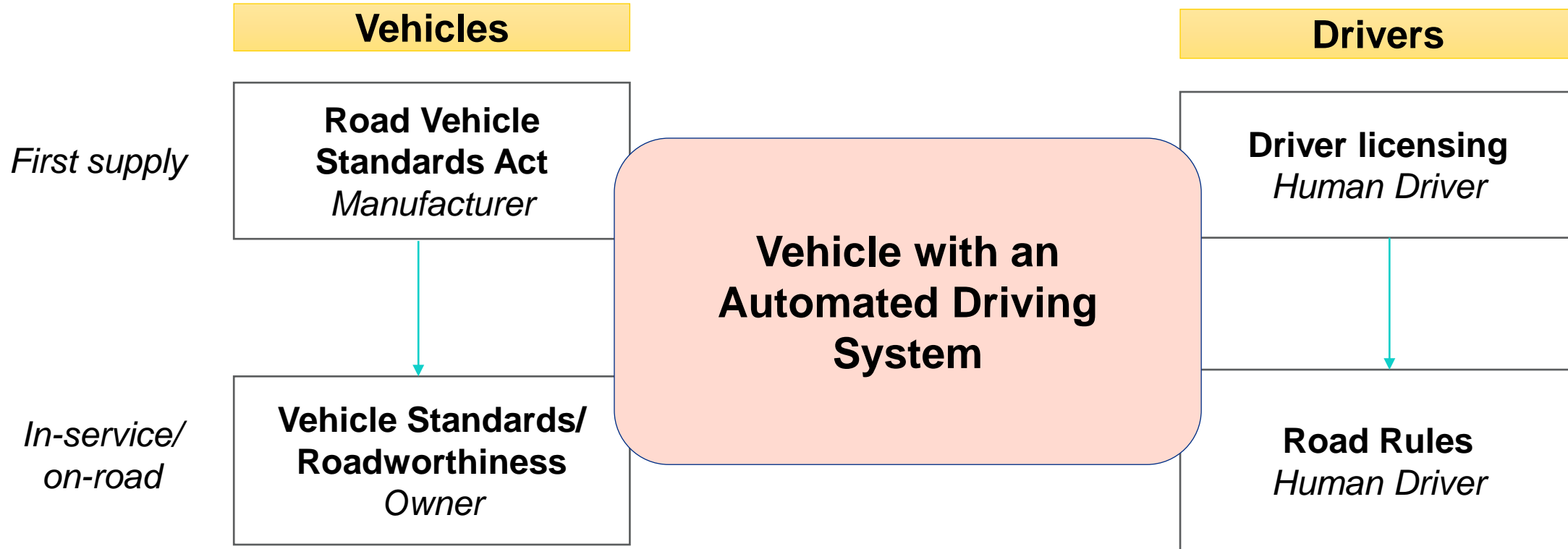
4. How do we manage injury insurance for automated vehicles?

5. How do we manage access to data?



Rethinking how (and whom) we regulate

Vehicles and drivers



Key Ministerial decisions to date

First supply	In-service
Existing regulator and laws – Commonwealth (DITRDC) will regulate the first supply of automated vehicles through the RVSA	New regulator and purpose-built national law – a single, national regulator will regulate the in-service safety of automated vehicles through a new national law
New entity – the Automated Driving System Entity (ADSE)	Control – the ADSE will be deemed to be in control of a vehicle when the ADS is engaged
Self-certification – ADSEs will self-certify against 11 safety criteria and 3 obligations	General safety duty – the ADSE will be subject to a general safety duty and its executive officers will have due diligence obligations
	Fallback-ready user obligations – the fallback-ready user must be sufficiently vigilant and fit to drive



Terminology

Automated vehicle

Automated Driving System (ADS)

Automated Driving System Entity (ADSE)

Fallback-ready user

Operational design domain (ODD)



Safety at first supply – safety criteria and obligations

Criteria

1. Safe system design and validation processes
2. Operational design domain
3. Human-machine interface
4. Compliance with relevant road traffic laws
5. Interaction with enforcement and other emergency services
6. Minimal risk condition
7. On-road behavioural competency
8. Installation of system upgrades
9. Verifying for the Australian road environment
10. Cybersecurity
11. Education and training

Obligations

1. Data recording and sharing
2. Corporate presence
3. Minimum financial obligations

Where does the current phase of work fit in?

Safety assurance for automated vehicles

	First supply	In-service
Regulated parties	ADSE	ADSE + ADSE executive officers + fallback-ready users + remote drivers
Safety requirements	Safety criteria and obligations	General safety duty, due diligence obligations, prescriptive duties
Regulator	DITRDC (Vehicle Safety Standards Branch)	National in-service regulator
Compliance and enforcement mechanisms	RVSA compliance and enforcement tools	?
Implementation	RVSA framework	National Automated Vehicle Safety Law ? (Commonwealth or S&T applied law)

Current phase of work

Compliance and enforcement for the in-service safety of automated vehicles

Overarching policy objective of this work:

Support the in-service safety of automated vehicles through appropriate regulatory powers and tools that allow effective enforcement and incentivise the ADSE to comply.

Specifically:

- identify the obligations of regulated parties
- identify the in-service regulator's functions
- identify the in-service regulator's compliance and enforcement powers
- identify how the in-service regulator will interact with other regulators and enforcement agencies
- clarify the role of on-road enforcement
- identify data use and access powers and privacy protections



Key topics in the discussion paper

- ADSE duties (incl. executive officer due diligence)
- Transfer of ADSE responsibilities
- ADS modifications
- In-service regulator's functions
- In-service regulator's compliance and enforcement powers
- Roadside enforcement
- In-service regulator's interaction with other agencies
- Information exchange
- Legislative implementation approach



ADSE duties

 Duties on parties in the national law

General safety
duty

Executive officer
due diligence
obligations

Prescriptive
duties

Transfer of ADSE responsibility

What happens when an ADSE leaves the market?

- The proposed in-service framework is premised on the existence of a legal entity (ADSE) responsible for the ADS.
- In a dynamic market corporations may experience changes and may need to exit market
- Proposal: Accreditation of new ADSE by the in-service regulator



In-service modifications

Type of parties, types of modifications and options for safety assurance

ADSEs

Modification to an AV to
increase the level of
automation or expand the ODD

Option 1: Approval by in-service regulator

Option 2: General safety duty

Non-ADSEs:

- Conventional vehicle manufacturers
- Corporate ADS installers

Modification to a conventional
vehicle to become an AV

Option 1: Approval by first supply regulator

Option 2: Approval by in-service regulator

Option 3: ADSE accreditation / General safety duty

Non-ADSEs:

- Individuals

Modification to a conventional
vehicle to become an AV

Option: Prohibition

In-service regulator's functions and powers

Key functions and powers proposed


Functions

- Monitoring
- Education and guidance
- Research
- Create standards
- **Accreditation, regulatory approvals**
- **Accident investigation**
- Enforcement

Powers

- Audit
- Inspection, entry and seizure
- Information access, collection and sharing
- Enforcement powers
 - Improvement notices, directions to act
 - Variation of permissions to operate
 - Infringement notices, formal warnings, enforceable undertakings
 - Injunctions
 - Suspend operation of an ADS
 - Civil penalties, criminal prosecution

Roadside enforcement

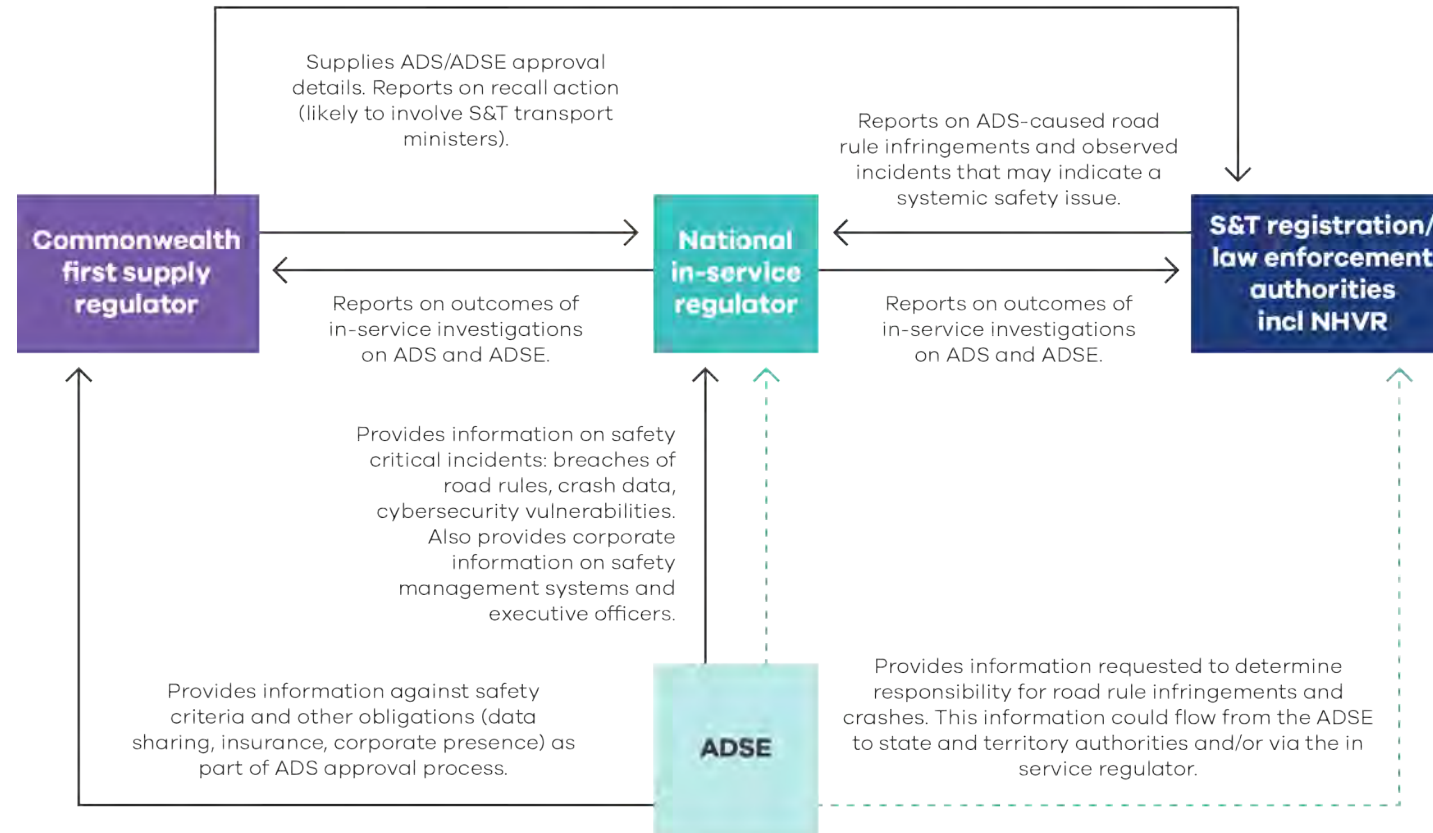
 What is the role of roadside enforcement agencies in the in-service safety of automated vehicles?

- Interact with AVs, for example to manage traffic flow, respond to 'live' automated vehicle safety incidents
- 'Eyes and ears' of the in-service regulator/first supply regulator. Identify and refer automated vehicle safety incidents where ADS in control (or where suspected to be in control) to in-service regulator
- Identify, investigate and take appropriate enforcement action against the human driver/fallback-ready user
- Automated vehicle accident investigation



Data exchange

Possible information flows for in-service compliance and enforcement of automated vehicles



*Other regulators discussed in chapter 9 are omitted from this diagram (for example, occupational health and safety agencies where the automated vehicle is a workplace, and point-to-point transport commissioners where commercial fleets of on-demand automated vehicles are a business model).

Proposed national approach to in-service safety

- ADSE duties – general safety duty, prescriptive duties
- ADSE executive officer due diligence obligations
- In-service regulator's functions
 - Accreditation for transfer of ADSE responsibilities
 - Regulatory approval for ADS modifications
- In-service regulator's compliance and enforcement powers
- Roadside enforcement
- In-service regulator's interaction with other agencies
- Information exchange

Legislative implementation approach for Automated Vehicle Safety Law?



Legislative implementation

 Options for implementation of the in-service safety approach

**Complementary Commonwealth
and state and territory law**

State and territory applied law



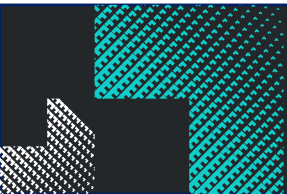
Next stages for in-service safety reforms

Now: Discussion paper and consultation. Submissions close 11 December 2020.

May 2021: Recommendations to Ministers on content of the national law for in-service safety

Post-May 2021: Moving to implementation

- Drafting the national Automated Vehicle Safety Law and necessary changes to state and territory legislation
- Establishing the regulator





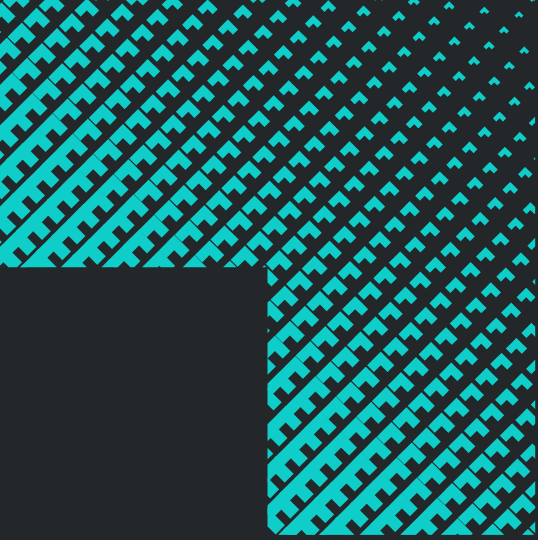
Questions

Should the in-service regulator have a role in approving ADSE transfers and in-service modifications?

Are there any other considerations for roadside enforcement interaction with automated vehicles?

Are there any other issues relevant to the in-service safety of automated vehicles that we have not covered?





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Commission



 **Thank you**

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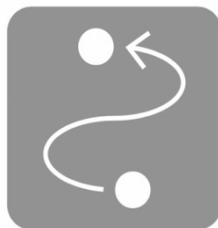
Unlocking Shared Mobility

Investigating free-flow parking for car-sharing in Australia

A guide to assist local authorities in understanding and planning for free-floating car sharing systems



SBCS
station-based
P2P



FFBS
free-floating
station-based



FFCS
free-floating
FFAB

Graphical representation - types of car sharing
Source: Paganelli (2013, p. 36)



This research undertook to assess the potential, opportunities and challenges, facing national and international cities in regard to shared mobility:

- **free-floating car sharing (FFCS)**
- **related parking issues**

The published report provides an evidence base and guidance to government and industry that may enable them to work collaboratively in a way that best suits the communities in the areas where they operate.

It identifies key issues policy makers should consider to manage car sharing development in their cities and integrate it with public policy objectives and practices.

2008

First free-floating car sharing operation done in Ulm, Germany, as an experiment of Daimler.

2009-2018

Development and growth of FFCS operations globally, particularly in Europe and North America.

2019

Significant changes in the market: companies shutting down in many places globally.

2020



2021+







Connectivity in C-ITS

Investigating
pathways to
accelerate the
uptake of road safety
and efficiency
technologies

about the project

This project aims to deliver a systematic understanding, classification, and evaluation of available communication technologies for roadway safety by combining the results of four lines of research inquiry:

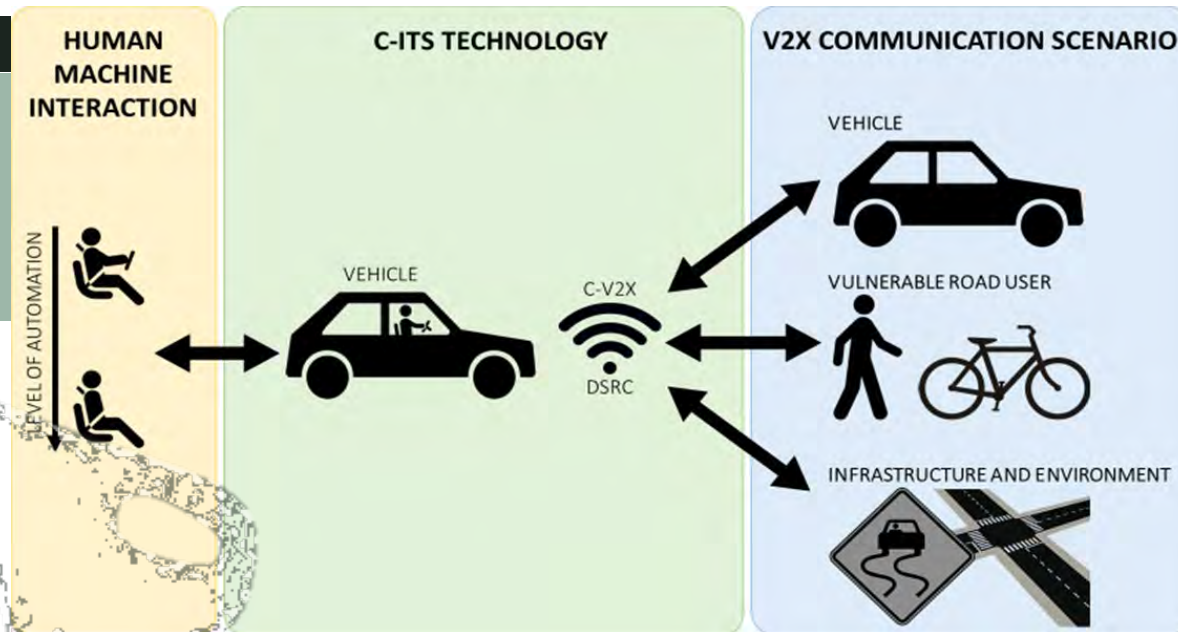
-  1) literature review of technologies, pilots, and trials
-  2) expert panel interviews
-  3) analysis of Victorian motor vehicle crash types
-  4) traffic simulation study to estimate the minimum penetration rate of connected vehicle technology



Four major connected safety use cases

- 1. IMA: Intersection Movement Assist
- 2. CFCW: Cooperative Forward Collision Warning
- 3. CSW: Curve Speed Warning,
- 4. RTA: Right Turn Assist

Drivers and
passengers would
benefit most from
IMA and CFCW





AP 2021

ITS Asia Pacific
Forum **Brisbane**

17th Asia Pacific Forum on Intelligent Transport Systems

Brisbane Convention & Exhibition Centre
Queensland, Australia | 12-15 April 2021

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