



Australian Government

Department of Infrastructure,  
Transport, Regional Development,  
Communications and the Arts



# Safety management system for vehicles with an ADS

This paper **expands** on previous policy work

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## Overview

Safety risks should be managed through a systematic approach. Each Automated Driving System Entity (ADSE) will be required to have a safety management system in place when it applies for certification and keep the system up to date throughout the design life of its Automated Driving System (ADS).

This paper covers the proposed safety management system requirements and seeks feedback.

## Key points

Safety management systems are a systematic approach to managing safety risks.

An ADSE will be required to have a safety management system for its ADS. The system will be considered by the regulator as part of the ADSE certification process.

The ADSE will need to implement, review and update its safety management system throughout the design life of its ADSs.

## Consultation question

We welcome feedback on all elements of the regulatory framework. In relation to the proposed safety management system requirements, we are especially interested in the following.

3. How suitable are the matters we propose to include in an ADSE's safety management system? Should other matters be considered?

# Certification requirements and ongoing duties and obligations

An entity will need to provide information about its safety management system whenever it seeks certification to be the ADSE for an ADS. The ADSE will need to implement, review and update its safety management system to ensure it manages the safety risks of its ADS throughout its design life.

## Certification

A corporation seeking certification as an ADSE will need to provide information about its safety management system as part of its application. This will allow the automated vehicle in-service safety regulator (the new regulator) to consider how the corporation intends to identify and manage the safety risks of its ADS over its design life.

Considering the safety management system at the point of certification will help ensure the corporation has appropriate measures in place to manage safety before they bring an ADS on to Australian roads. The requirements for a safety management system are set out in this paper.

## In-service obligations

Once certified, the ADSE will have a safety duty to ensure that it continues to implement, review and update its safety management system. A safety management system may need to be reviewed and updated in response to a range of things, such as:

- improvements in technology
- changes to road infrastructure
- improved information about the operational design domain
- data the ADSE has collected about the safety performance of the ADS
- improved evidence and knowledge more broadly about ADS safety
- modifications to the ADS.

The ADSE will need to notify the new regulator when there are significant changes to the safety management system and provide updated documentation.

The new regulator will be able to direct an ADSE to update or amend its safety management system in limited circumstances, including when there is:

- an emerging safety issue that applies across multiple ADSs
- an update is needed to account for a new international standard.

A direction by the regulator to update a safety management system would need to be given to the ADSE using a written notice that includes the reasons for requiring the changes, and allowing the ADSE to:

- seek a review of the regulator's decision
- provide information to the regulator about why the amendments should not be made
- identify alternative amendments that would achieve the same outcome.

## Guidance on safety management system requirements

To complement the minimum requirements for a safety management system, it is intended that the new regulator may issue guidance to ADSEs on what the safety management system could include

and what evidence could support it. As the automated vehicle industry matures, the regulator may recognise any standards or codes of practice developed for safety management systems for ADSs.

## What is a safety management system?

A safety management system is a systematic approach taken by an organisation to manage safety risks and assure the effectiveness of safety risk controls. It includes policies, procedures and practices for managing safety risks.

Safety management systems are used in other transport safety regulatory frameworks in Australia, including civil aviation, domestic commercial vessel, heavy vehicle, and rail safety regulatory frameworks. They are also used in other contexts, such as workplace health and safety. While the specific elements of a safety management system will depend on the context, it usually includes:

- an organisational commitment to safety, supported by a safety policy and objectives
- hazard and risk identification, assessment of risks; and determination of the need for, and suitability of, new or updated risk controls and mitigations
- a systematic process to assess and record the effectiveness of risk control strategies and identify new hazards, through practices such as audits, reporting, safety investigations, monitoring and continuous improvement
- the promotion of safety and a positive safety culture through training and education, ongoing communication and other actions.

## Why adopt a safety management system for ADSs?

Once a conventional vehicle is on the road, the safe performance of the driving task is largely left to the person driving the car. For a vehicle with an ADS, the ADSE will have an important ongoing role in ensuring the safe operation of the ADS. The performance of the ADS could change or degrade over time, or new hazards could emerge in the driving environment that an ADS may not have been designed to manage. These are things that an individual vehicle owner may not notice or be able to manage or correct.

Without an ongoing process for identifying hazards, understanding risks, controlling those risks, and making sure the way the risks are controlled are effective, an ADS that met all the necessary safety standards when it was first provided to the market could become less safe over time. A safety management system will provide a systematic way for an ADSE to understand safety risks, respond to them, and continuously maintain or improve the safety of its ADS.

## Automated Vehicle Safety Law requirements for safety management systems

The Automated Vehicle Safety Law (AVSL) will include requirements for the safety management system. A corporation will need to provide information about its safety management system when seeking certification as an ADSE. The safety management system will need to be implemented, reviewed and updated by the ADSE.

## Safety management system requirements

An ADSE's safety management system will be a set of organisational structures, accountabilities, policies, procedures and practices that the ADSE will use to meet its safety duties and obligations in relation to its ADSs under the AVSL. The safety management system will also give the new regulator an understanding of how the ADSE intends to meet its obligations under the AVSL.

An ADSE's safety management system will need to meet minimum requirements, but the AVSL will not prescribe how the safety management system should be designed. The minimum requirements may be set out in a legislative instrument, to allow them to be easily updated.

The requirements for a safety management system could include information about how the ADSE will:

- maintain, review and update compliance of the ADS(s) with the applicable national road vehicle standards
- identify, manage and minimise known and foreseeable risks, including cybersecurity risks, arising from the operation of the ADS
- deliver education and training to owners, operators, fallback-ready users, repairers and other relevant parties
- maintain the ADS's on-road behavioural competency, including the functionality of the ADS in the Australian road environment
- ensure continued compliance of the ADS with relevant road traffic laws
- ensure continued compliance with any data recording/sharing requirements and safety reporting obligations under the AVSL
- ensure continued compliance with its law enforcement and emergency services interaction protocol (LEESIP)
- coordinate any recall action with suppliers of ADS components
- notify vehicle owners and users of safety issues and other matters that relate to the effective operation of the ADS, including when the design life will be approaching its end
- otherwise carry out its safety duties under the AVSL.

As part of the safety management system, an ADSE will need to identify how it will ensure its processes, policies and systems are implemented and improved over time. This could include identifying matters such as:

- each person responsible for preparing any part of the system, and the person, or class of persons, responsible for implementing and maintaining the system
- executive officers that have influence over the ADSE's compliance with safety duties under the AVSL
- the commercial arrangements the ADSE has in place, including with any parent company, original equipment manufacturers or other relevant suppliers with an influence on the safety of the ADS, to ensure that the entity will be able to meet its duties and obligations under the AVSL
- accountability mechanisms such as external auditing or reporting structures
- the procedures the ADSE will implement to determine if changes are required to its ADS to maintain compliance with its safety duties.

### **Consultation question**

3. How suitable are the matters we propose to include in an ADSE's safety management system? Should other matters be considered?