

## Discussion Paper

# Implementing the Safer Freight Vehicles reforms

June 2023



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## Safer Freight Vehicle Reforms

As Australia's independent regulator for all vehicles over 4.5 tonnes gross vehicle mass (GVM), the National Heavy Vehicle Regulator (NHVR) is committed to improving road safety for all. With a vision of a *safe, efficient and productive heavy vehicle industry serving the needs of Australia*, the NHVR works with all levels of government to lead industry towards a safer future.

The safer freight vehicle reforms are one example of the collaborative work being undertaken between the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (the Federal Department), and the NHVR. These reforms align with commitments made to improve the safety of vehicles made as part of the Vehicle Safety and Environmental Technology Uptake Plan ([Vehicle SETUP](#)) and the [National Road Safety Action Plan 2018-2020](#).

While initial commitments have been made to adopt the proposed changes, the NHVR recognises that the final content and format of the Federal SFV Package is still subject to further regulatory processes and government approval. Even though the SFV reforms are still being finalised, if implemented, they will represent some of the most notable improvements in the vehicle standards space for some time and could see significant improvements in safety.

This discussion paper has been drafted to assist in the in-service policy development process by engaging with interested parties to gain their input into the proposed in-service changes that will be required.

## Summary

The standards that apply to vehicles are governed by two pieces of legislation. The first applies before the vehicle is provided to a consumer and is administered by the Federal Department under the *Road Vehicle Standards Act* (RVSA). The second applies after the vehicle has been provided to a consumer, i.e., has entered service and is administered by the National Heavy Vehicle Regulator (NHVR), in participating jurisdictions, under the *Heavy Vehicle National Law* (HVNL).

The standards made under the RVSA, known as the Australian Design Rules (ADRs), are designed to ensure that vehicles meet minimum safety, security, and emissions requirements. When amendments are made to the ADRs, in-service regulators, such as the NHVR, must review the legislative requirements that will apply to these vehicles once they have been provided to a consumer.

Currently, the Federal Department is in the process of finalising the first suite of amendments that relate to Safer Freight Vehicles (SFV). These changes, intended to apply to new heavy vehicles, are designed to increase the availability of vehicles fitted with advanced safety features. It is expected that reducing the regulatory burden on manufacturers will effectively improve road safety by increasing the uptake of safety features and technologies fitted to heavy vehicles.

This paper identifies the in-service considerations relevant to the first package of work, the anticipated legislative amendments necessary to enact the changes, and proposes how the implementation may be carried out. The proposed changes discussed in this paper relate to an increase in the overall width of heavy vehicles and the consequential amendments as they relate to the implementation of enhanced devices for indirect vision, and additional exemptions when measuring the length and width of vehicles.

While the NHVR broadly supports the proposed changes, it must be acknowledged that a final decision regarding the maximum overall width measurement (2.55m or 2.6m) is yet to be determined by the Federal Department. Similarly, a final decision regarding increased width of heavy trailers has not been reached. This paper considers the operational issues should trailers be included but recognises that inclusion or exclusion of trailers is ultimately a decision for the Federal Minister and their Department.

This paper does not discuss the merits of the proposed changes. Making changes to the HVNL to accommodate the first round of amendments was endorsed at the Infrastructure and Transport Ministers Meeting (ITMM) in February 2022.

## Introduction

Vehicles are required to meet a minimum set of standards before they are allowed to be used on a road in Australia. These standards are designed to focus on three critical areas, which are safety, security, and emissions.

The responsibility for applying the rules about heavy vehicles, including the Vehicle Standards, is shared between the following three areas of government:

- The rules that apply before a vehicle is provided to a consumer for the first time are administered by the Federal Department. These rules are referred to as the [Australian Design Rules](#) (ADRs).
- The rules (including the vehicle standards) that apply after a vehicle is provided to a consumer for the first time (becomes an 'in-service' vehicle) in participating jurisdictions are administered by the NHVR, these rules are referred to as the in-service regulations.
- The rules that apply to registering a vehicle are administered by State and Territory transport authorities.

**Note:** In the two non-participating jurisdictions, the West Australian and Northern Territory transport authorities are responsible for administering their own in-service heavy vehicle rules.

As the authority on the standards that apply to new vehicles, the Federal Department is responsible for mandating standards that improve road safety outcomes. Increasingly, technology intended to assist drivers to safely operate their vehicles is emerging in international markets, as this happens, the potential benefits to road safety become more apparent. While regulators continue to look for ways to improve the voluntary uptake of these technologies, it is recognised that there still exists some hesitancy due in part to regulatory barriers such as the misalignment of the ADRs and the standards that apply to vehicles in their origin markets.

While Australia maintains a local heavy freight vehicle manufacturing capability, Australia remains an import market, accepting vehicles and components that are built and designed for international markets. For the most part, the ADRs align with international requirements which means that minimal changes are required to the vehicles to operate domestically. However, a number of fundamental standards remain un-harmonised including vehicle dimension and axle configurations requirements.

Through consultation with stakeholders, the gap in these standards has been found to be a major barrier limiting the uptake of some vehicle safety and other technologies. The Federal Department has proposed amendments to address this and further harmonise the ADRs with international standards and practices. These amendments are referred to as the Safer Freight Vehicles Packages (SFV Packages).

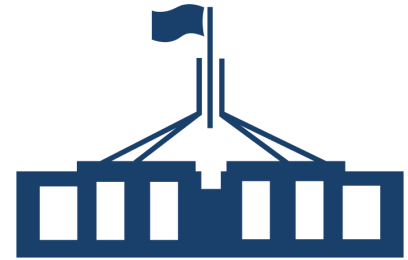
Changes to the ADRs become mandatory on new vehicles from the date stipulated in the applicability table of the relevant ADR. While the NHVR works closely with the Federal Department on ADR amendments, changes to the in-service regulations may still be necessary to complement the ADR amendments.

The NHVRs approach to this is to consider all options proposed by the Federal Department and provide recommendations on what in-service actions would be needed to implement these changes when they are approved. If a particular reform proposal is not approved by the Federal Department, then there would be no in-service actions required and the relevant proposal would not be progressed any further.

## Overview of the Federal *Safer Freight Vehicles Packages*

The Federal Department has proposed amendments aimed at reducing the regulatory barriers to the uptake of safety technologies identified as part of the *Vehicle Safety and Environmental Technology Uptake Plan* (Vehicle SETUP) and the *National Road Safety Action Plan 2018-2020*. These amendments are referred to as the SFV Packages.

The implementation of the first package of work will be addressed in more detail throughout this discussion paper. This package of work will address the following proposals:



- **Increased overall width** will see the overall width of heavy motor vehicles and/or trailers increased from 2.5m to 2.55m, or 2.6m, subject to the fitment of certain safety technologies.
- **Enhanced devices for indirect vision** will adopt European requirements for certain indirect vision devices (IVDs) and introduce new provisions for US style blind spot mirrors.
- **Additional exemptions for vehicle length** will see certain safety technologies and features excluded when measuring vehicle length.
- **Additional exemptions for vehicle width** will expand the list of devices currently excluded when measuring vehicle width, including safety technologies required by the SFV package.
  - Additional amendments that have been proposed for future packages of these reforms include:
- Adopting the provision for **quad axle groups** into ADRs that are currently provided for in HVNL
- Increasing the allowable distance between axles in **twin steer axle groups** from 2m to 2.5m to align with European requirements
- Amending the requirements for measuring **rear overhang** of vehicles with a retractable axle
- Increasing the **transition mass** limits that apply to vehicles with retractable axles to match the general mass limits detailed in the [Heavy Vehicle \(Mass Dimension and Loading\) National Regulation](#) (MDL regulation)
- Increasing the maximum **cold tyre pressure** limit from 825Kpa to 900Kpa to partially accommodate European standards.

The NHVR will develop and socialise discussion papers on the implementation of the additional packages of work in parallel with the Federal Departments' timeframes.

## Submissions

We are seeking submissions from all operators, industry associations, state and territory road authorities, manufacturers, modifiers, and any other impacted individuals.

As you work through each section of the proposal, we ask that you consider the following questions:

- 1. Do you support the NHVRs proposed approach to implementation?**
- 2. Can you identify any issues or risks that the proposed approach will have?**
- 3. Do you have an alternate approach to implementation?**

Submission must be submitted to the NHVR by COB 30 June 2023 using the [Feedback Form](#), by email to [vsprojects@nhvr.gov.au](mailto:vsprojects@nhvr.gov.au).

**Note:** Submissions to this discussion paper are limited to the proposed in-service actions covered in this paper. Any comments or submissions relating to the proposed changes to the Australian Design Rules should be directed to the [Vehicle Safety Standards](#) branch of the Federal Department.



## Safer Freight Vehicles Package: Vehicle width

The first package of work includes proposed changes that will allow for increased vehicle overall width. This package includes consequential amendments that relate directly to increased width. Specifically, as they relate to enhanced devices for indirect vision, and additional exemptions for vehicle length and width.

### 1 Increased vehicle width

#### 1.1 Proposal Summary

Domestically, the overall width of a standard heavy road vehicle (i.e., ADR category NB2, NC, TC and TD) is limited to 2.50m, with exemptions given to the fitment of certain features such as mirrors, side marker lights and load restraint devices. This limit is more restrictive than many origin markets, meaning that some vehicles intended for the Australian market must be modified to become compliant with local requirements.

These modifications vary in complexity from the redesign of cabin features to the redesign and replacement of axles and associated components. Naturally, the costs associated with the re-design and re-engineering of vehicles is passed on to consumers. Additionally, many vehicle manufacturers have indicated that misaligned dimension limits in Australia poses additional barriers including:

- Reducing the range of models that they are able to bring to Australia as only models that are able to be made to comply in a cost-effective manner can be brought here
- Delays in being offered new vehicle models as the local requirements for changes is deferred until after that model has been released in markets where these barriers do not exist
- Reducing the range of advanced safety technologies on offer as these often sit at the extremes of the vehicle and they must be removed to meet our dimension limits

The proposed change will align the overall width measurement with international markets. This being the European market at 2.55m and/or the American market at 2.60m. This increase in width is proposed to be available on the condition that certain safety features are fitted to the vehicle.

It should be noted that the technologies nominated in the SFV technology package represent a further harmonisation with features that are standardly fitted to vehicles in the European market. The understood intent of this decision is to not only offset any risk the additional width presents but to also ensure there is an overall net safety benefit. This approach ensures a mutually beneficial outcome for the industry, regulators, and the community in that it reduces the costs for manufacturers and provides for improved road safety through increased fitment of safety technology. It is worth mentioning that many of the safety technologies these amendments support, are targeted at improving the safety of vulnerable road users, but will also benefit the general public and protect valuable road infrastructure.





**The additional safety features that are proposed to allow for increased width will include:**

- For *SFV Motor Vehicles*:
  - Devices for indirect vision (including compliance with UN R46 requirements to fit Class V and VI devices and a local variation for ‘cross over mirrors’ to satisfy Class VI field of vision on bonneted vehicles)
  - Vehicle Stability Function (commonly known as ESC), as per UN R13 and ADR 35/07<sup>1</sup>
  - Advanced Emergency Braking (AEB), as per UN R131 and ADR97/00<sup>1</sup>
  - Lane Departure Warning Systems, as per the EU requirements and as recommended in UN R130<sup>1</sup>
  - Blind Spot Information Systems (BSIS)<sup>2</sup>, as per UN R151
  - Side Underrun Protection (SUP)<sup>3</sup>, as per UN R73 and
  - Conspicuity markings, as per ADR13/00.
- For *SFV Trailers*:
  - Side Underrun Protection, as per UN R73
  - Conspicuity markings, as per ADR13/00 and
  - ABS and Roll Stability Control (RSC)<sup>1</sup>, as per ADR 38/05 Trailer Brake Systems.

## 1.2 Proposed implementation approach

The NHVR proposes to progress changes to width limits as a change to general dimension limits in accordance with the direction given by responsible ministers at their meeting in February 2022.

Implementation of this proposal would in the first instance require the progression of amendments to the HVNL, the Vehicle Standards Regulation and the Mass, Dimension and Loading Regulation. These amendments would benefit from a new definition of Safer Freight Vehicle that considers both new, and existing vehicles that have been fitted with the safety technologies required by the new ADR, e.g., Safer Freight Vehicle means a heavy vehicle fitted with the relevant safety technologies as defined in the applicable ADR. The regulations could then be amended to allow a vehicle considered an SFV to also be up to 2.55m or 2.60m wide.

The ability to identify a vehicle as an SFV will also be required. This information must be consistent and readily available to both enforcement officers and operators alike. It is proposed that this identification would be dealt with in a number of ways, including Federal compliance information, labelling by the vehicle manufacturer, and fitting of modification plates.

To ensure the safety benefits of the advanced technology features are maintained, it is recommended that a restriction that SFV trailers may only be towed by SFV motor vehicles be introduced. It is worth noting that a new modification code would be required providing an avenue for existing in-service vehicles to be ‘upgraded’ to meet the new definition of SFV so that they may tow SFV trailers.

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<sup>1</sup> The relevant standards include exemptions from fitting ESC to trucks with four or more axles and trucks designed for off-road use.

<sup>2</sup> The Federal Department has indicated that compliance with R151 would not be mandatory immediately given this regulation is still under implementation in origin markets. A commencement date for this requirement will be determined once origin market implementation is completed.

<sup>3</sup> The relevant standard includes an exemption from fitting side underrun to prime movers.

While not technically a requirement of the SFV technology package, emission standards would be considered in the development of a new VSB6 modification code, with an entry requirement of Euro IV (or equivalent), or better, to be included. This approach ensures that the wider governmental policy of improving emissions levels across the fleet is upheld.

Additionally, education and guidance documents will be integral to the implementation of the proposal. It is anticipated that some of the communication will be carried out in conjunction with the Federal Department but that the education of enforcement and in-service operators will fall to the NHVR.

### 1.3 In-service considerations


Historically, vehicle regulators have long faced the added complexity that comes from integrating the ADRs with the in-service vehicle regulations. While the ADRs are primarily focused on individual vehicles, in-service regulations must consider both the standards for individual vehicles but also the use of multiple units in combination.

#### 1.3.1 Interoperability

Australia is unique in that much of the freight task uses multi-combination vehicles. For this reason, it is important to highlight the likelihood of fleets combining SFVs and traditional vehicles. Three scenarios that can be applied to all combinations have been identified and are discussed in this section.

The safety technologies required by the SFV reforms have been chosen to reduce any risk of increasing the overall vehicle width. The nature of these systems and the practicality of applying them, means that they are primarily fitted to the motor vehicle with fewer technologies fitted to the trailer. This means that when considered as individual units, the net safety benefit of motor vehicles and trailers is not equal.

To summarise the safety benefits, it can be said that the proposed technology package will assist both drivers and other road users.



**SFV motor vehicles** assists the driver by:

- Increasing awareness of the area directly adjacent to the vehicle, and the vehicle's position on the road
- Actively avoiding or mitigating the severity of rear-end in lane collisions
- Providing safer braking under normal and emergency conditions.

**SFV Trailers** assists drivers by:

- Providing safer braking under normal and emergency conditions.

**SFV motor vehicles** assists other road users by:

- Increasing visibility of the vehicles
- Reducing the likelihood of vehicles becoming trapped under the vehicle from the side.

**SFV Trailers** assists other road users by:

- Increasing visibility of the vehicles
- Reducing the likelihood of vehicles becoming trapped under the vehicle from the side



Given the average age of the heavy motor vehicle fleet is more than 15 years, it cannot be reliably expected that traditional vehicles will be fitted with the required safety features and as such, similar safety benefits cannot be assumed. For this reason, the NHVR believes that the interaction between vehicles that are fitted with these technologies and those that are not, needs careful consideration.

A single agreed position on the mixing of SFV and traditional vehicles in combination is yet to be reached, but there are three scenarios that are being used to inform this consideration.

In-service, there are a large number of ways that combination can be configured, but the NHVR is of the opinion that each can be summarised to fit one of the three scenarios. For example:

- An SFV Motor Vehicle towing a single SFV Trailer would fit under scenario 1.
- An SFV Motor Vehicle towing two SFV Trailers as a B-Double combination would also fit under scenario 1 as all units are SFVs.
- A mixed scenario where a traditional motor vehicle was towing two trailers, one that is an SFV Trailer and one that is traditional, the 'worst case' approach would be applied as classified under scenario 3.

### Scenario 1: SFV Motor Vehicles towing SFV Trailers

As all units in these combinations will have the SFV technology package, the NHVR has not identified any risks from a vehicle perspective. The only issue the NHVR has identified in this scenario is that some roads may be designated as unsuitable for wider vehicles. This is a road infrastructure issue that does not require any restriction or additional safety controls to be implemented under the in-service regulations. Any necessary restrictions on these roads can be managed by road managers using current powers, such as those used to limit access to over height vehicles.

### Scenario 2: SFV Motor Vehicles towing traditional trailers

As SFV Motor Vehicles would be fitted with the SFV technology package, the NHVR has not identified any risks from a vehicle perspective. As with scenario one, the only issue the NHVR has identified is that some roads may be designated as unsuitable for wider vehicles. This is a road infrastructure issue that does not require any restriction or additional safety controls to be implemented under the in-service regulations. Any necessary restrictions on these roads can be managed by road managers using current powers, such as those used to limit access to over height vehicles.

### Scenario 3: Traditional vehicle towing SFV Trailers

This scenario holds the most cause for consideration. As discussed above, the technologies that mitigate any risk of increasing overall vehicle width are primarily fitted to the towing vehicle. In this scenario, the traditional motor vehicle is hauling wider trailers without being fitted with the mitigating safety technologies, this poses a risk that must be considered.

**Table 1. Overview of SFV interoperability risks**

Configuration	Risk?	Interim position
SFV motor vehicles towing SFV trailers	No additional risks identified	No controls required
SFV motor vehicles towing traditional trailers	No additional risks identified	No controls required
Traditional vehicle towing SFV trailers	Risks identified	Controls required
Mixing SFV and traditional trailers in multi-combination vehicles	Potential risks	Further consideration required

## The NHVR has considered three possible options for how to approach this scenario:

### Option 1 - Allow traditional motor vehicles to tow SFV Trailers:

This option is the most lenient regulatory option; however, it is considered to be contrary to the fundamental approach of the reforms that safety technology is required to mitigate the operating risks of wider vehicles. While this option would be the most permissive for industry there are no safety controls or safety benefit for the general public or regulators. The NHVR does not support this option.

### Option 2 – Prohibit traditional motor vehicles from towing SFV Trailers:

This option may be considered a more stringent regulatory option as it is the most restrictive, however, it is consistent with fundamentals of this reform. While this approach would prevent a potential safety risk from being realised, it is also highly restrictive to industry and may negatively impact flexibility for operators and reduce freight efficiency. The NHVR does not support this option.

### Option 3 – Require SFV technology package to tow SFV Trailers:

This option can be considered a hybrid approach which separates the reforms into two distinct parts; the SFV technology package and increased width. This approach takes a risk managed approach and focuses on the safety benefits that come from the fitment of the SFV safety package and for this reason, is the NHVR's preferred option.

The concepts of wider vehicles and the SFV technology package when combined infers that a vehicle can only be an SFV Motor Vehicle if it is wider than 2.50m and is fitted with the SFV technology package. But given the SFV technology package is central to safety, an alternate approach should be considered:

- Ensure the definition of SFV Motor Vehicle relies on the vehicle being fitted with the SFV technology package.
- Refrain from including the overall width as a defining feature of an SFV Motor Vehicle.
- Amend the dimension limits to allow an SFV to be up to 2.55m or 2.60m wide.
- Introduce a requirement that an SFV Trailer that is wider than 2.50m may only be towed by an SFV Motor Vehicle (agnostic to the width).

This approach puts the focus on mitigating the risks, rather than the width of the hauling unit. It has also been noted that such an approach would also potentially increase the safety technology uptake benefits by:

- Encouraging manufacturers to fit the SFV technology package to new 2.50m wide vehicles that were manufactured after the commencement of the SFV reforms.
- Encouraging operators to retrofit or take up newer vehicles that are fitted with the SFV technology package so that they are provided with maximum operational flexibility.

### Mixing SFV and traditional trailers in multi-combination vehicles

Integrating vehicles with advanced safety technologies into the existing fleet presents an additional complexity for consideration. The NHVR recognises that it would be unreasonable to prevent the in-service mixing of new SFV trailers and traditional trailers.

Because the ADRs change to adopt progressively more advanced technology over time, the heavy vehicle fleet already features varying levels of safety technology. While all of these vehicles are considered safe, helping operators understand how to put together a mixed-technology combination so that they get the most benefit from the technology, is highly beneficial. The heavy vehicle industry has taken the lead in providing this type of assistance by publishing information about maximising safety when using variable braking and stability systems<sup>4</sup>.

This guidance focuses on the interaction between units with advanced braking systems and vehicles fitted, or not fitted with, varying brake technologies. This is because there are a number of factors that can impact getting the most out of the technology fitted to a mixed combination. It would then stand to reason that similar consideration should also be given to maximising the benefits of the SFV technology package in a mixed technology combination.

Given the existing industry-led interest in this area, the NHVR is of the opinion that updating this guidance to include more advanced braking systems such as Advanced Emergency Braking should be considered.



### Proposed implementation actions

- Progress amendments to the HVNL and associated Regulations that
  - Create SFV as a category of heavy vehicles that are fitted with the SFV technology package, and
  - Limit SFV trailer with a width exceeding 2.50m to only be towed by a motor vehicle that is an SFV.
- Guidance on the interoperability of SFVs with traditional vehicles should be developed and made available to the industry.

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<sup>4</sup> [Guide to Braking and Stability Performance for Heavy Vehicle Combinations](#)

### 1.3.2 Identifying Safer Freight Vehicles

A recurring concept that has emerged during the development of the SFV reforms is the need for enforcement, modifiers, and operators to be able to readily identify vehicles that meet the requirements to be an SFV.

Discussions between transport regulators has identified that there are a number of different options for how the identification could be provided, including:

- Inclusion on the Federal Register of Approved Vehicles (RAV)
- physical marking of the vehicles either on a vehicle plate or part of the secure vehicle identifier required under ADR61/03
- Manufacturer issued certification, such as a ratings letter or similar document
- In-service identification for vehicles modified to comply with SFV reforms.



At the time of releasing this discussion paper, regulators were agreed that identification of SFV was important and must be included in the final ADR and in-service systems. However, the solution for how this will be done is still under consideration.

#### Proposed implementation actions

- Continue to contribute to the development of identification requirements for SFV.
- Develop and publish guidance about the identification of SFV for Enforcement Officers and external stakeholders (operators, industry groups and modifiers etc.).

### 1.3.3 In-service certification and modifications

Currently, some in-service heavy vehicles are already fitted with systems that will be required by the SFV technology package. So that operators who have already purchased these vehicles are not disadvantaged, it is important that the NHVR offers a means of re-classifying and identifying in-service vehicles fitted with the SFV technology package.

**Note:** This becomes especially important should the approach identified above, Option 3 – Require SFV technology package to tow SFV Trailers, be adopted as the NHVRs approach to the interoperability of SFV with traditional vehicles in the fleet.

Vehicle Standards Bulletin 6 (VSB6) is the National Code of Practice for Heavy Vehicle Modifications. It sets the National Standard for common in-service modifications and provides Approved Vehicle Examiners with the criteria to perform and approve modifications. It is proposed that VSB6 could be used as a simple avenue to allow in-service vehicles to be modified and/or certified as being SFVs.



#### In-service SFV Certifications

Once these reforms have been implemented, it is expected that the core of the SFV technology package will be fitted to new vehicles by the vehicle manufacturer. However, other requirements such as conspicuity marking, and side underrun protection will likely be fitted after the vehicle is provided to market. As such, changes will also be required to existing VSB6 modification codes to provide for these final elements to be fitted and certified.

A certification code would provide an avenue to confirm that the vehicle, as supplied and without physical modification, has been fitted with the appropriate SFV technology package. This code would benefit in-service vehicles provided with the SFV technology package before the SFV reforms have been implemented. Additionally, it would provide the means to have a vehicle reclassified as an SFV where, for whatever reason, the vehicle was not classified as an SFV on the RAV before it was provided to a consumer.

#### In-service SFV Modifications

A Modification code would provide industry with an avenue to modify any existing vehicle to comply with the requirements of the SFV technology package.

While it is recognised that the additional safety technologies may be difficult to retrofit to existing vehicles, a pathway should still be made available to ensure operators have the option to upgrade older vehicles. To accommodate this, it is proposed that a new modification code be developed and added to the Vehicle Standards Bulletin 6 (VSB6).

**Note:** The HVNL provides an avenue for vehicles that require certification or modification prior to the completion of new VSB6 codes. Operators can apply directly to the NHVR for approval under Section 87 of the HVNL.

#### Proposed implementation actions

- Develop new codes in Vehicle Standards Bulletin 6 that provides for the modification and certification of a heavy vehicle as an SFV.
- Amendment relevant sections of Vehicle Standards Bulletin 6 to provide for the fitting and certification of final elements of the SFV technology package.



1.3.4 Emission standards

It should be noted that the SFV packages are only one of the initiatives being undertaken by the Federal Department. Emission standards that align with Euro VI requirements will be mandatory for heavy motor vehicles commencing from 1 November 2024. This means that all new vehicles will be subject to the improved emissions standards regardless of the vehicle width.



While Euro VI (or equivalent) emission standards are not an explicit requirement of the proposed ADR width allowance, the Regulator suggests that improved emission standards (Euro IV or better) be a minimum requirement for a vehicle to be considered an SFV in-service. This ensures that these vehicles which represent the highest level of safety are also some of the cleanest vehicles in the fleet.

This would not exclude any vehicles classed as SFV through ADR certification.

**Proposed implementation action**

- Include a minimum emission standard to be classed as an SFV under the HVNL, associated Regulations and the new Modification code in VSB6.

1.3.5 Ensuring consistent enforcement



Consistent and effective enforcement hinges on the ability for on-road enforcement officers being able to readily identify which vehicles are eligible for the increased width allowance. Once the legislation amendments have been resolved, an extensive education program would be needed to ensure all Enforcement Officers are educated on these new requirements.


**Proposed implementation action**

- Develop guidance for identification of SFV for internal stakeholders, operators, modifiers, and other impacted parties.

## 1.4 Anticipated legislative amendments


To ensure the proposed amendments are applied correctly in-service, it is important to ensure that the legislation is updated to clearly detail the requirements that apply to SFVs. These amendments would need to consider the ability to easily identify whether a vehicle is eligible to operate under the SFV provisions.

**Table 2. Projected RVSA (ADR) amendments for vehicle width package**



ADR	Proposed changes
Def & Veh Cat	OVERALL WIDTH - further amend to add CTI protrusion limit, fixed webbing assy maximum width (TBC).
13/00	Amend clause in section 10 - set conspicuity markings as optional for vehicles <= 2.50 m OW only.
43/04	Amendments to allow NB2 and NC vehicles to have a maximum overall width of 2.55 m (or 2.60m).
	Amendments to allow trailers over 4.5 t ATM to have a maximum overall width of 2.55 m (or 2.60m).
	Require wider vehicles to meet 13/00 conspicuity, 14/03, 35/07, 97/00, 99/00, 105/00, 106/00 as applicable.
35/07	New ADR - Commercial Vehicle Brake Systems (mandatory for wider vehicles)
	Now in force - update applicability section to mandate for wider NB2 and NC vehicles.
97/00	New ADR - Advanced Emergency Braking (mandatory for wider vehicles)
	Now in force - update applicability section to mandate for wider NB2 and NC vehicles.
99/00	New ADR - Lane Departure Warning Systems (mandatory for wider vehicles)
105/00	New ADR - Blind Spot Information Systems (mandatory for wider vehicles)
106/00	New ADR - Side Underrun Protection (mandatory for wider vehicles)

**Table 3. Projected HVNL amendments for vehicle width package**



Legislation	Section	Proposed amendment
HVNL	Definitions	Add definition of <i>Safer Freight Vehicle</i>
	s153A Using restricted access vehicle	Amend width to 2.55m/2.60m
MDL	Sch 6 s7 Width	+ .05/.10m as appropriate
	Sch 8 s2 Warning signs and flags	Amend width to 2.55m/2.60m
	Sch 8 s5 (1) (c) Side and rear markers and warning lights for oversize vehicles used at night	Amend width to 2.55m/2.60m
	Sch 8, s14 (a) Towing a low loader dolly with an unladen low loader	Amend width to 2.55m/2.60m
VS Regs	s8 Measurement of width of vehicles	+ .05/.10m as appropriate

## 2 Consequential amendments related to SFV

The technology features mandated by the SFV technology package will require amendments to related standards. These amendments will provide for enhanced devices for indirect vision and concessions for vehicle width, and length, measurements.

### 2.1 Enhanced devices for indirect vision

### 2.1.1 Proposal Summary

This proposal would see the adoption of the latest technical requirement of the UNECE Regulation 46/04 (UN R46/04) into ADR14 and mandated on SFV motor vehicles.

Indirect vision devices (IVDs) such as cameras, mirrors, and other detection systems, are used to monitor areas directly adjacent to the vehicle that cannot be directly viewed by the driver. It is recognised that increasing a driver's awareness of the area directly adjacent to the vehicle offers significant safety benefits.

Traditionally, the fitment of IVDs has been limited to mirrors, however, with increasing technological developments, there are now a wide range of camera and sensors that can provide information to the driver which would require some amendment to the existing ADR requirements.

To encourage a greater up-take of vehicles fitted with improved IVDs, the proposed changes will seek to amend ADR 14/02 – Rear vision mirrors. A new ADR14/03 is proposed, which would detail the technical requirements for the fitment of crossover mirrors and adopt the European requirements for IVDs as detailed in UN R46/04.



### 2.1.2 Proposed implementation approach

Implementation of this proposal would in the first instance require the progression of amendments to the HVNL, the Vehicle Standards Regulations and the Mass, Dimension and Loading Regulations. These amendments would look to adopt newly defined terms to allow for new devices to be fitted to in-service vehicles.

Additionally, the implementation of the proposal would benefit from education and guidance documents. Communication with enforcement officers, vehicle modifiers and others who have responsibility for measuring vehicles, should be carried out prior to the first SFV entering service. This information would be complemented by general guidance to owners and operators designed to encourage the uptake of enhanced devices for indirect vision for in-service vehicles.

This would ultimately see an increased variety of devices fitted to both SFVs but also to the existing heavy vehicle fleet.

### 2.1.3 In-service considerations

The in-service impacts identified with this proposal are minimal.

While supportive of fitting devices that increase a driver's awareness of the area directly adjacent to the vehicle, the NHVR holds some concerns regarding the fitment of devices that do not hold an appropriate certification. Although the proposal imposes protrusion limits and deformation requirements, it is difficult to assure compliance with these requirements in the absence of certification.

That said, the NHVR supports the proposed amendments to ADR14 in principle and recognises the safety benefits of retrofitting enhanced devices for indirect vision. Amendments to the in-service regulations were made in 2021 providing exemptions to certain *blind spot information systems* and *indirect vision devices*. These provisions will be reviewed and amended to align with the proposed ADR amendments.

Additionally, education and guidance documents will aid the implementation of the proposal. It is recommended that general guidance for the heavy vehicle industry be produced and published. The intent of this guidance would be to increase the awareness of available technologies and encouraging operators to add these technologies to the existing fleet.

#### Proposed implementation actions

- Progress amendments to the in-service regulations to align with the terminology adopted in the ADRs.
- Develop and publish guidance about the safety benefits of retrofitting enhanced devices for indirect vision.

## 2.3 Measuring vehicle width and length

Currently, certain devices are not included when measuring a heavy vehicles' overall width and length. The proposal seeks to amend these requirements to align with the increase in overall width.



### 2.3.1 Proposal Summary

So that operators are not disadvantaged by the fitment of enhanced IVDs to SFVs, amendments to the existing width exemptions, and a new length exemption, have been proposed<sup>5</sup>.

#### Width exemption

Presently, certain devices are excluded when measuring vehicle width. These exemptions are provided in both the ADRs and the in-service regulations. Devices currently excluded from width measurements in the in-service regulations include:

- Rear vision mirrors, signalling devices and side-mounted lamps and reflectors
- Anti-skid devices mounted on wheels, central tyre inflation systems, tyre pressure gauges
- Permanently fixed webbing-assembly-type devices – such as curtain-side devices, provided that the maximum distance measured across the body including any part of the devices does not exceed 2.55m.

The proposal would also exclude the following devices, and systems, when measuring the width of the vehicle:

- Rear vision mirrors (also referred to in the ADRs as rear-view mirrors)
- Devices for indirect vision, fitted in accordance with a new ADR 14/03 – Devices for Indirect Vision (or any later version of this ADR)
- Any other devices that help the driver to see objects in an area adjacent to the vehicle, including crossover mirrors<sup>6</sup>
- Monitoring devices fitted as part of an automated driving system and/or a system to inform the driver of the presence of other road users (e.g., vehicles, bicyclists, pedestrians) in an area in close-proximity (within 2 m) to the vehicle body<sup>5</sup>.

#### Length exemption

The proposal would exclude all of the following devices, and systems, when measuring the length of the vehicle:

- Devices for indirect vision, fitted in accordance with a new ADR 14/03 - Devices for Indirect Vision (or any later version of this ADR)
- Any other devices that help the driver to see objects in an area adjacent to the vehicle, including crossover mirrors<sup>7</sup>
- Monitoring devices fitted as part of an automated driving system and/or a system to inform the driver of the presence of other road users in an area in close-proximity (within 2m) to the vehicle body<sup>6</sup>.

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<sup>5</sup> All devices exempt from width and length measurements would be subject to the existing ADR requirements for external projections including recommendations for protrusion limits and impact test requirements.

<sup>6</sup> A protrusion limit of 100mm in total is proposed for devices exempt from width measurements (excluding IVDs, and central tyre inflation systems)

<sup>7</sup> A protrusion limit of 250mm in total is proposed for devices exempt from length measurements (excluding IVDs).

**2.3.2 Proposed implementation approach**

The NHVR implemented amendments to exclude blind spot mirrors from length measurements in 2020, making the in-service impact of the proposed exemptions minimal. A review of the specific requirements and minor amendments to the regulations will be required once the ADR position has been finalised as it is noted that the proposal increases the length exemption from the current allowance of 150mm, to 250mm.

It is anticipated that the role of education for enforcement and in-service operators will fall to the NHVR. As such, guidance and instruction explaining the changes to vehicle measurement requirements would need to be developed and passed on to all Enforcement Officers and all other parties responsible for measuring vehicles.

**2.3.3 In-service considerations**

**New defined terms**

To sufficiently prescribe the above requirements, new defined terms are also proposed.

These terms include:

- |                                       |  |
|---------------------------------------|--|
| • Automated driving system            | • Close-proximity information system     |
| • Bonneted cab                        | • Crossover mirror                       |
| • Cab-over engine vehicle             | • Operational design domain              |
| • Class of device for indirect vision | • Prescribed device for indirect vision. |

Where possible, the NHVR would look to adopt any new defined terms into the HVNL and associated regulations. While alignment with the ARDs would be desirable, careful consideration given to any unintended consequences of applying specific terms with narrow scope, more broadly within the HVNL will be required.


**Proposed implementation actions**

- Review and progress necessary amendments to the in-service regulations.
- Develop and publish guidance about the new width and length measurement requirements.

## 2.4 Anticipated legislative amendments


To ensure the proposed amendments are applied correctly in-service, it is important to ensure that the legislation is updated to clearly detail the requirements that apply to SFVs. These amendments would need to consider the alignment and placement of definitions in the in-service regulations.

**Table 4. Projected RVSA (ADR) for enhanced devices for indirect vision**



ADR	Proposed changes
Def & Veh Cat	AUTOMATED DRIVING SYSTEM - add definition
	BONNETED CAB - add definition
	CAB-OVER ENGINE VEHICLE - add definition
	CLASS OF DEVICE FOR INDIRECT VISION - add definition
	CLOSE-PROXIMITY INFORMATION SYSTEM - add definition
	CROSSOVER MIRROR - add definition
	OPERATIONAL DESIGN DOMAIN - add definition
	PRESCRIBED DEVICE FOR INDIRECT VISION - add definition
	FRONT END - amend definition (allows further exemptions for vehicle length calculation)
	OVERALL WIDTH - amend definition (allows further exemptions for vehicle width calculation)
14/02	Recognise ADR 14/03 compliance as removing need for ADR 14/02 compliance.
	Text correction in Appendix A (UN R46 rev5)
14/03	New ADR, latest tech req of UN R46, compulsory front view, bonneted cab additions, nil Appendix C.

**Table 5. Projected HVNL amendments for enhanced devices for indirect vision**




Legislation	Section	Proposed amendment
HVNL	Definitions	Automated driving system - add definition
		Bonneted cab - add definition
		Cab-over engine vehicle - add definition
		Class of device for indirect vision - add definition
		Close-proximity information system - add definition
		Crossover mirror - add definition
		Operational design domain - add definition
		Prescribed device for indirect vision - add definition
		Front end – add definition
		Safer Freight Vehicle
VS Regs	s13A Front blind spot mirrors	Update ADR reference
		Remove reference to class VI mirror
		Amend protrusion limit to 250mm
	s13B Blind spot information systems	Amend to include additional systems certified to ADR14/03 or later version of ADR14



## 3 Summary of anticipated legislative amendments

### 3.1 Projected RVSA (ADR) amendments

The following amendments have been identified by the Department of Infrastructure, Regional Development, Communications, and the Arts (DIRDCA).



ADR	Proposed changes
Def & Veh Cat	AUTOMATED DRIVING SYSTEM - add definition
	BONNETED CAB - add definition
	CAB-OVER ENGINE VEHICLE - add definition
	CLASS OF DEVICE FOR INDIRECT VISION - add definition
	CLOSE-PROXIMITY INFORMATION SYSTEM - add definition
	CROSSOVER MIRROR - add definition
	OPERATIONAL DESIGN DOMAIN - add definition
	PRESCRIBED DEVICE FOR INDIRECT VISION - add definition
	FRONT END - amend definition (allows further exemptions for vehicle length calculation)
	OVERALL WIDTH - amend definition (allows further exemptions for vehicle width calculation)
	OVERALL WIDTH - further amend to add CTI protrusion limit, fixed webbing assy maximum width (TBC).
13/00	Amend clause in section 10 - set conspicuity markings as optional for vehicles $\leq 2.50$ m OW only.
14/02	Recognise ADR 14/03 compliance as removing need for ADR 14/02 compliance.
	Text correction in Appendix A (UN R46 rev5)
14/03	New ADR, latest tech req of UN R46, compulsory front view, bonneted cab additions, nil Appendix C.
43/04	Amendments to allow NB2 and NC vehicles to have a maximum overall width of 2.55 m (or 2.60m).
	Amendments to allow trailers over 4.5 t ATM to have a maximum overall width of 2.55 m (or 2.60m).
	Require wider vehicles to meet 13/00 conspicuity, 14/03, 35/07, 97/00, 99/00, 105/00, 106/00 as applicable.
35/07	New ADR - Commercial Vehicle Brake Systems (mandatory for wider vehicles)
	Now in force - update applicability section to mandate for wider NB2 and NC vehicles.
97/00	New ADR - Advanced Emergency Braking (mandatory for wider vehicles)
	Now in force - update applicability section to mandate for wider NB2 and NC vehicles.
99/00	New ADR - Lane Departure Warning Systems (mandatory for wider vehicles)
105/00	New ADR - Blind Spot Information Systems (mandatory for wider vehicles)
106/00	New ADR - Side Underrun Protection (mandatory for wider vehicles)

### 3.2 Projected HVNL amendments

The following amendments have been identified by the NHVR.

Legislation	Section	Proposed amendment	NHVR
HVNL	Definitions	Automated driving system - add definition	
		Bonneted cab - add definition	
		Cab-over engine vehicle - add definition	
		Class of device for indirect vision - add definition	
		Close-proximity information system - add definition	
		Crossover mirror - add definition	
		Operational design domain - add definition	
		Prescribed device for indirect vision - add definition	
		Front end – add definition	
	Ch 4, s153A Using restricted access vehicle	Amend width to 2.55m/2.60m	
MDL	Sch 6 s7 Width	+.05/.10 as appropriate	
	Sch 8 s2 Warning signs and flags	Amend width to 2.55m/2.60m	
	Sch 8 s5 (1) (c) Side and rear markers and warning lights for oversize vehicles used at night	Amend width to 2.55m/2.60m	
	Sch 8, s14 (a) Towing a low loader dolly with an unladen low loader	Amend width to 2.55m/2.60m	
VS Regs	s8 Measurement of width of vehicles	+.05/.10 as appropriate	
VS Regs	s13A Front blind spot mirrors	Update ADR reference	
		Remove reference to class VI mirror	
		Amend protrusion limit to 250mm	
	s13B Blind spot information systems	Amend to include additional systems certified to ADR14/03 or later version of ADR14	

## Appendix A: Glossary of terms

For the purpose of this document, the following terms and abbreviations are considered to have the below meanings:

***in-service regulation*** means the Heavy Vehicle National Law (HVNL) and any National Regulations made as subordinate legislation.

***provided to a consumer*** means the road vehicle to has been correctly entered on the RAV, and a contract of sale has been entered into between the consumer and either an OEM or dealership (see [Guidance Note](#) from the Federal Department).

**Safer Freight Vehicle** means a heavy vehicle fitted with the relevant safer freight vehicle technology package.

**SFV Trailer** means a trailer fitted with the SFV technology package (and may be wider than 2.5m).

**SFV Motor Vehicle** means a motor vehicle fitted with the SFV technology package (and may be wider than 2.5m).

**Safer Freight Vehicle technology package** means the mandatory technology features that the ADRs require a vehicle to be fitted with to exceed 2.50m in width.

**Traditional motor vehicle** means a motor vehicle that does not exceed 2.50m and is not fitted with the SFV technology package.

**Traditional trailer** means a trailer that does not exceed 2.50m and is not fitted with the SFV technology package.

Acronym	Meaning
ADR	Australian Design Rules
AEB	Autonomous Emergency Braking
BSIS	Blind Spot Information Systems
ESC	Electronic Stability Control
EU	European Union
GTM	Gross Trailer Mass
GVM	Gross Vehicle Mass
HVNL	Heavy Vehicle National Law
NB2	Medium Goods Vehicle exceeding 4.5 tonnes GVM and up to 12 tonnes GVM
NC	Heavy Goods Vehicle exceeding 12 tonnes GVM
RAV	Register of Approved Vehicles
RVSA	Road Vehicle Standards Act
SUP	Side Underrun Protection
SFV	Safer Freight Vehicle
SVI	Secure Vehicle Identifier
TC	Heavy Trailer, GTM exceeding 10 tonnes
TD	Medium Trailer, GTM exceeding 3.5 tonnes up to 10 tonnes
UN	United Nations